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ABSTRACT

Utah's Southeastern Education Service Center has devised a five-phase vision plan for improving the educational technology infrastructure in the southeastern region of the state. The fourth phase involves the creation of the Southeastern Utah Regional Wide Area Network (SURWAN), which will link all K-12 schools to the Internet by 1996. This document describes a survey given to teachers, administrators, superintendents, and local college personnel to help Far West Laboratory evaluate SURWAN. Background information on the respondents (n=419) is provided, including their professional role, their years of experience, age and gender, highest level of education, and county of residence. These respondents were asked about the awareness of SURWAN, their mode of access to it, barriers to its use, time spent online, the amount and quality of information found there, whether or not they are actually producing information for SURWAN, and whether or not they view it as valuable to the community. Results indicate, among other things, that: (1) most respondents and their students have access to more communications technologies at work than at home; (2) between 6% and 10% of respondents are aware of and use SURWAN; (3) respondents rate high-tech media as reliable as print media but rarely use them; and (4) although respondents agree that technology is the wave of the future, their attitudes toward their future benefits remain neutral. A copy of the vision plan and the survey are appended, along with survey results grouped by county and by grade level. (Contains 71 tables.) (BEW)

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Baseline Survey of Educational Technology Access and Application in Southeastern Utah

November, 1995

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Baseline Survey of Educational Technology Access and Application in Southeastern Utah

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November, 1995

Far West Laboratory for Educational Research and Improvement

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I. Overview of the Educational Technology Infrastructure in Southeastern Utah

The Southeastern Education Service Center in Price, Utah serves the four school districts of Carbon County, Emery County, Grand County and San Juan County, four rural counties making up the lower eastern quadrant of the state of Utah. The four districts serve 19 communities with a combined population of 49,800 residents and a combined school enrollment of nearly 14,000 students.

In order to bring economic and educational advantages to the area, the Southeastern Education Service Center created a governance structure across the counties to coordinate a long-range *Vision Plan* in five phases for delivering education services to the region via technology (See Appendix A).

Phase I and Phase II of the plan was successfully initiated with funding and support from state and corporate entities. In 1994, the Rural Electrification Administration of the U.S. Department of Agriculture provided partial funding to complete Phase III and implement Phase IV of the *Vision Plan*. Phase III deals with "last mile" links to schools and classrooms and Phase IV details improvements and upgrades to the existing infrastructure.

As part of Phase IV, REA funding was used to install a sophisticated computer network, the Southeastern Utah Regional Wide Area Network (SURWAN), that will link all K-12 schools to the Internet by 1996. Partners for the REA grant include the Southeastern Education Service Center, Far West Laboratory and U.S. West Corporation. In-kind technical assistance for SURWAN was provided by WordPerfect Corporation, Novell Corporation and the University of Utah.

Subsequent funding in 1995 by the U.S. Department of Education in the form of a Technology Challenge Grant will allow the Southeastern Education Service Center to implement Phase V of the region's *Vision Plan*. Phase V will link schools to state and national parks and other cultural centers in the southeastern region. These local resources will be used as the basis of technology-driven curriculum and activities that are tied to school reform standards. This project will spin off from the SURWAN infrastructure and will be called *SURWEB*.

The SURWAN evaluation conducted by Far West Laboratory, a regional educational laboratory, will assess the effect of the REA-funded project on increased educational and economic capacity in southeastern Utah. The evaluation of SURWAN is funded by the Office of Educational Research and Improvement (OERI) as part of the Lab's work in the region.

In the first stage of the evaluation process, Far West Laboratory worked with the Southeastern Education Service Center in 1995 to design and administer a survey of educators in the southeastern Utah region in order to provide baseline information about current access and application of telecommunication resources in southeastern Utah.

In 1996, Far West Laboratory will conduct follow-up studies to evaluate changes in the baseline information in order to assess the consequences of Rural Electrification Administration funding

for the region's telecommunications infrastructure on the educational and economic opportunities of southeastern Utah.

II. Rationale for the Survey

The Baseline Survey of Educational Technology Access and Application in Southeastern Utah is intended as a first step in providing a measure of the effectiveness of the objectives of the SURWAN project on the educational and economic development of the region served by the Southeastern Education Service Center. Objectives of the SURWAN project are to:

1. **Provide equitable access to telecommunication resources to rural residents.** The survey was designed to assess existing access to telecommunication resources and to see how that access might vary for a variety of end user groups. Aspects of access posed in the survey include questions about the availability of telecommunication hardware and software both at home and at work.

2. **Provide resources to students and teachers that support Utah's math and science framework.** Far West Laboratory supports math and science reform in the state of Utah through a grant from the Eisenhower Project. By connecting to the Far West Laboratory server, SURWAN will be used to disseminate math and science resources through the World Wide Web, telnet and gopher to the existing network of teachers in the southeastern region. Baseline data about the dissemination of instructional materials for math and science reform will be gathered from the Eisenhower Math and Science Consortium throughout the length of the SURWAN project.

3. **Provide a testbed for effective application of technology in rural communities**. The baseline survey for the SURWAN evaluation includes questions about the use and application of technology. Respondents are asked to express their opinions about the information provided through various educational technologies. These range from "low-tech" classroom resources such as textbooks, to high-tech resources found on CD-ROM and the Internet. Respondents rate these technologies on Likert scales that ask how much, how easy, how reliable, how available, how often and for what purposes various classroom information technologies are used. Follow-up surveys will measure changes in the use and application of classroom information technologies as a result of SURWAN.

4. **Create an infrastructure to support economic development for the region.** The survey asks respondents to evaluate the value of technology to their communities. The survey measures respondent's attitudes about the specific benefits of SURWAN, as well as the general economic and social potential of technology.

In addition, the *Baseline Survey of Educational Technology Access and Application in Southeastern Utah* asked respondents about their awareness of the wide area network (SURWAN) in their region. Although elements of the network have been in place for a number of years, the baseline

data was not expected to yield a widespread awareness of SURWAN. It is hoped that in follow-up surveys, that awareness of the SURWAN information technology infrastructure will increase.

III. Methodology

The survey was designed to assess technology access, use and application among a widespread audience of users in Southeastern Utah. It was administered to 600 public school teachers, administrators, superintendents, and local college personnel in the region. Many of the target samples were also parents or business people.

Surveys were hand-delivered by Service Center staff to principals in each building who then disseminated them to teachers. In addition, surveys were administered by Service Center personnel in a meeting of superintendents and college presidents in April 1995. Of the total sample of 600 instructional and administrative staff, 419 surveys were returned for a return rate of 70%.

Responses were coded using SPSS Statistical software so that responses could be cross-tabulated. Where appropriate, mean scores were created for Likert scale responses in the following sections of the survey: Section III; Access to SURWAN; Section IV: Information Resources; and Section VI: The Value of SURWAN to the Community. Survey data were reported in table and bar graph formats.

The survey was designed to infer broad categories of potential use for SURWAN. For example, In Section IV some responses were grouped and reported according to the kinds of information technologies: print, electronic, or telecommunications. Responses in Section VI were grouped to indicate either negative or positive attitudes to technology, in general.

IV. Results of the Survey

The Baseline Survey of Educational Technology Access and Application in Southeastern Utah was designed in six parts: I. Background Information that profiles respondents by professional and personal information; II. Awareness of the SURWAN Network; III. Access to SURWAN; IV. The Use and Application of Information Resources (by teachers, community members and students); V. Producing Information for SURWAN (hands-on and interactive uses of SURWAN); and VI. The Value of SURWAN to the Community, (a measurement of community attitudes about the general value of technology). Results are reported in this order.

1. Respondent Background Information

Background information on respondents include: professional role/affiliation, years of experience, age, gender, education level, county residence, length of stay in the county, and whether respondents have children in the public school system.

Professional Role. Table 1 shows the distribution of respondents' professional roles.

Table 1
Distribution of Respondents by Role

Role	Number of Respondents	% of Sample
Grade K-3 Teacher	109	26.0
Grade 4-6 Teacher	79	18.9
Middle School Teacher	66	15.8
High School Teacher	109	26.0
Higher Education Teacher	3	0.7
School Administrator	20	4.8
Business Person	1	0.2
Technology Specialist	4	1.0
Parent	4	1.0
Other	14	3.3
No Response	10	2.4
Total	419	100.0

Most of the respondents (86.7%) are K-12 teachers. Elementary teachers (K-6) represent 44.9% and secondary teachers (middle-high school) represent 41.8% of all respondents. There are very few other role groups represented in the sample. The survey sample of administrators, a group that includes superintendents, principals and local college employees, represent only 4.8% of the total.

Years of Experience. As shown in Table 2, most respondents are veteran teachers and administrators in the school system.

The survey respondents have many years of professional experience. Only 11.9% of the respondents have 3 or fewer years of experience; while 39.4% of the respondents have more than 15 years of experience. Looking at the data in another way, about three-quarters of the respondents (73.8%) have 7 or more years of experience.

Table 2
Distribution of Respondents by Years of Experience

Experience	Number of Respondents	% of Sample
1-3 Years	50	11.9
4-6 Years	47	11.2
7-9 Years	52	12.4
10-15 Years	92	22.0
Over 15 Years	165	39.4
No Response	12	2.9
Total	419	100

Age and Gender. Age is related to years of experience. The age distribution falls in a bell-shaped curve. The largest group of respondents (42.3%) are between 40-49 years old and a small number of respondents are represented at both extremes of the bell-shaped curve, that is, a few respondents are either in their twenties (8.4%) or in their sixties (3.4%).

Table 3
Distribution of Respondents by Age Group

Age	Number of Respondents	% of Sample
20-29 Years	34	8.4
30-39 Years	87	21.4
40-49 Years	172	42.3
50-59 Years	99	24.3
Over 60 Years	14	3.4
No Response	12	2.9
Total	419	100

The sample of respondents include significantly more females (63.8%) than males (36.0%). The gender distribution in this sample, Table 3 reflects that of the teaching profession in general and this region in particular.

Highest Level of Education. Table 4 shows the data on the highest level of education reported by respondents.

Table 4
Distribution of Respondents on Highest Level of Education

Educational Level	Number of Respondents	% of Sample
High School	2	0.5
High School Grad	1	0.2
Some College	7	1.7
BA/BS Degree	108	26.5
Post College Classes	184	45.2
MA/MS Degree	98	24.1
Ph.D/Ed.D Degree	6	1.5
No Response	12	2.9
Total	419	100

The region is home to a number of colleges and community colleges and the sample consists of an educated group of professionals. Almost all respondents (97.6%) have at least a BA/BS degree. Slightly less than half (45.2%) report coursework beyond the BA degree and about a quarter of the respondents (25.6%) have advanced degrees.

County of Residence. Table 5 displays the data on the distribution of respondents by county. Table 6 shows the length of residence in the county.

Table 5
Distribution of Respondents by County of Residence

County	Number of Respondents	% of Sample
San Juan	86	21.3
Emery	132	32.7
Grand	41	10.1
Carbon	136	33.7
Other	8	1.9
No Response	15	3.6
Total	419	100

Of the respondents who answered the question on county of residence, about two-thirds of the respondents in approximately equal numbers are from Emery (32.7%) and Carbon (33.7%) counties; the remaining one-third of the respondents are from San Juan (21.3%) and Grand Counties (10.1%). This proportion of responses reflects the relative sample size for each county: Carbon (218 employees, 13 schools), Emery (124 employees, 11 schools) and San Juan (196 employees, 12 Schools). Grand County (62 employees, 4 schools) has fewer potential respondents than the other counties in the Utah Southeastern Education Service Center region.

Table 6
Distribution of Respondents by Length of Residence in County

Length of Residence	Number of Respondents	% of Sample
Less Than a Year	20	4.9
1-3 Years	25	6.2
4-8 Years	30	7.4
9-15 Years	64	15.8
Over 15 Years	263	64.9
No Response	15	3.6
Total	419	100

Data on the length of residence in the southeastern region of Utah (Table 6) show that the respondents are rooted in their communities. Only 11.1% of the respondents have lived in the region for three years or less. Most respondents (80.7%) have lived in their respective counties for 9 years or more and a majority of respondents (64.9%) have lived in their counties for more than 15 years. Respondents consist of a majority who currently have children enrolled in the public school system (59.9%). The remaining (40.1%) respondents do not.

In short, the sample consists of mostly veteran K-12 teachers from all four counties in the region who have done some graduate work and who have lived in the area for at least a decade. A slight majority of respondents currently have children enrolled in school.

2. Awareness of the SURWAN Network

The SURWAN system is relatively new. It was funded in 1994 to provide "last mile" links to all 39 public elementary and secondary schools in the southeastern region of the state. As a result, few respondents are aware of the system, especially when queried about it by name, instead of by a generic "Internet" label.

Only 26 respondents (6%) have ever heard of the SURWAN telecommunication system; 14 respondents (3%) have tried to use it; none of the respondents have been involved in planning for it or have received training about it. The few who are aware of SURWAN learned about it from their supervisor or colleagues.

As respondents moved through the survey, more of them reported using SURWAN. In contrast to the 3% who reported using SURWAN in Section II, 10.5% of the respondents identified themselves as SURWAN users in Section IV (see Table 13). This discrepancy indicates confusion about SURWAN, possibly a lack of name recognition. It is possible that respondents begin to associate SURWAN with Internet access as they respond to subsequent items in the survey.

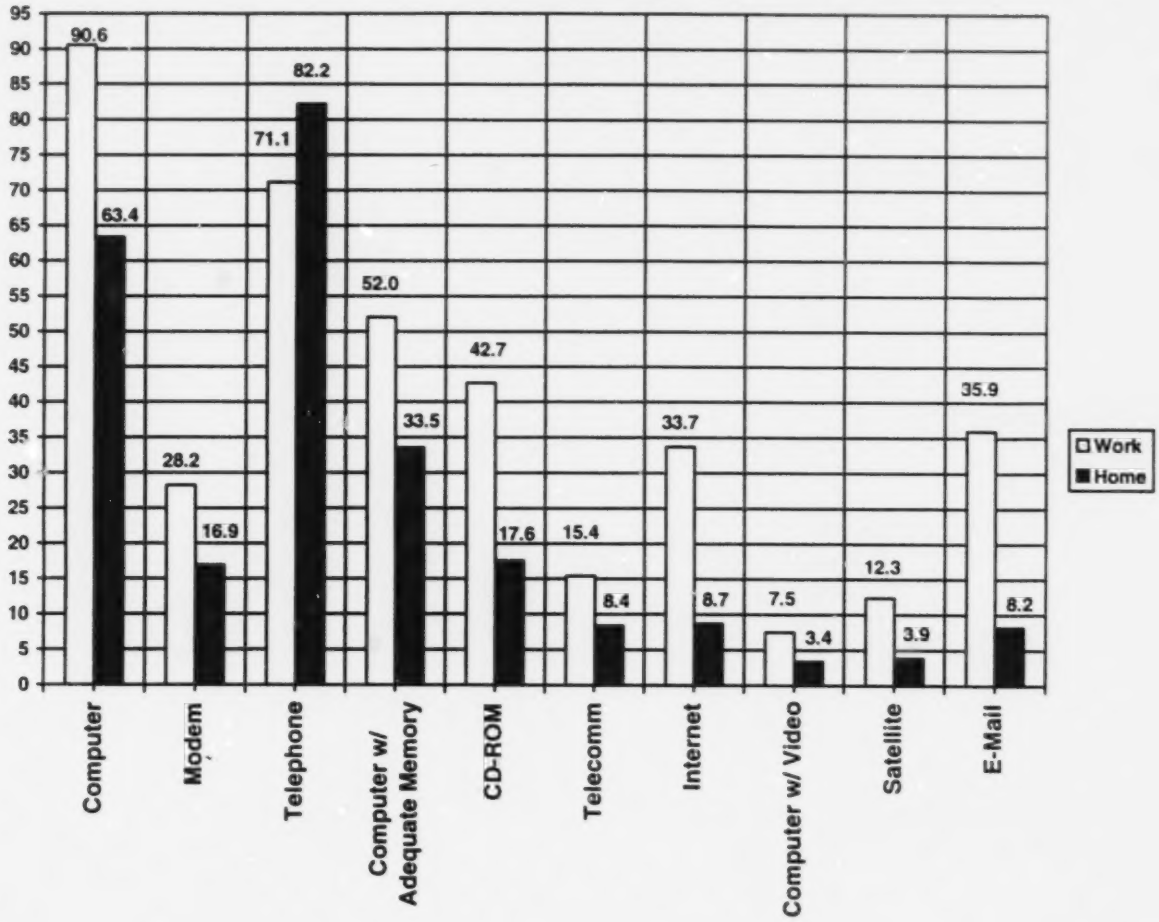
3. Access to SURWAN

Educator Access to Technology. Respondents were asked to indicate the type(s) of technology tools available to them both on the job and at home. Table 7 displays the percentage of respondents who indicated access to various types of technology.

A majority of respondents have access to a computer and a telephone, both at home and at work, although those who report no telephone access at all is significant. Almost 20% of the respondents do not have a telephone at home and nearly 30% do not have a telephone at work. Over Table 7 shows that 90% of respondents have access to a computer at work and 63% have home computers. Over 71% have a telephone at work and 82% have telephones at home.

Many of the computer users had access to powerful equipment. They reported that a substantial percentage of the computers available to them at work have adequate memory (52.0%). In addition, many respondents had access to CD-ROM (42.7%), E-mail (35.9%), the Internet (33.7%), and modems (28.2%).

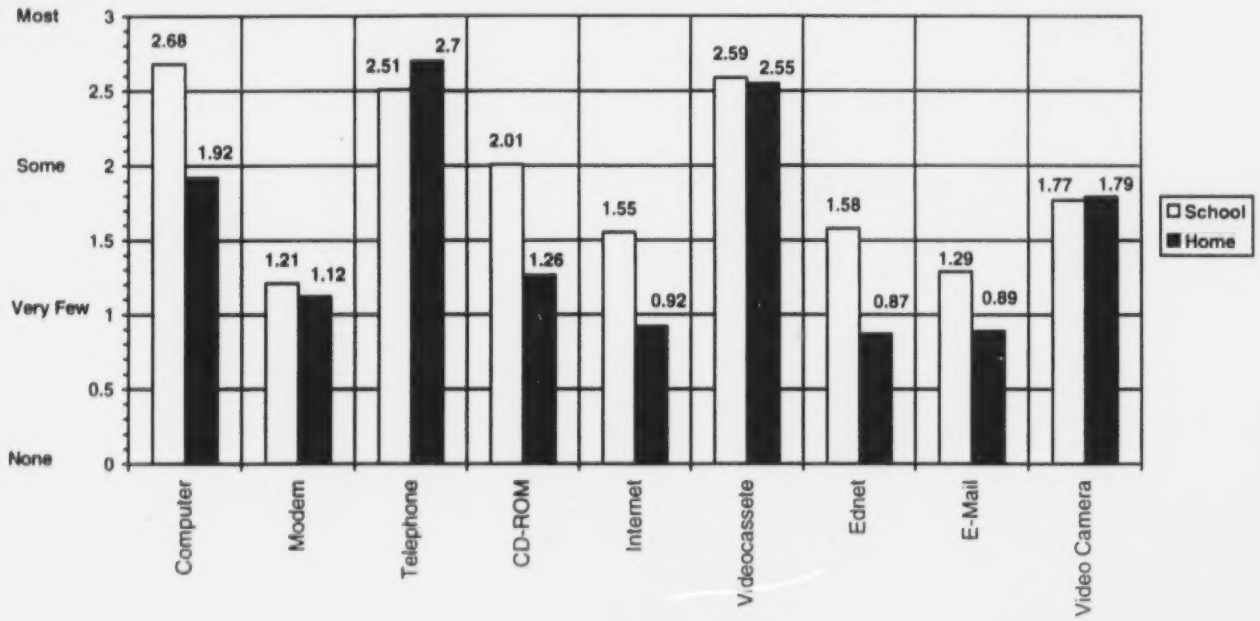
Table 7
Percentage of Respondents with Access to Technology
at Work and at Home



Except for the telephone, respondents have access to more technology at work than they do at home. Substantially fewer respondents report access to telecommunication software (15.4%), computer video (7.5%) and satellite broadcasts (12.3%). The satellite broadcast figure roughly corresponds with the percentage of users who report using EdNet, the distance education service in the region (16.2%). It is possible that a few respondents were not aware that EdNet programming was delivered via satellite (See Table 15: Percentage of Respondents Who Use Commercial and Educational Information Providers).

Student Access to Technology. Respondents were asked to speculate about students' access to technology both at school and at home, from "none" to "most" (see Table 8).

Table 8
Mean Ratings of Estimated Student Access to Technology at School and at Home
(Scale: 0 = None; 1 = Very Few; 2 = Some; 3 = Most)



Several aspects about this data are noteworthy. First, respondents indicate that "some" or "most" students have access to computers, telephone, and videocassettes both at school and at home, although educators estimate that the number of students who have computers at home is less than those who have access to computers at school. The rate of non-respondents for questions about computers, telephones and videocassettes ranged from 8.9%-17.95%.

Educators think that more students have access to a phone at home than at school. They also believe that students have slightly more access to a video camera at home than at school (ratings=1.79 at home and 1.77 at school with an 18%-19.9% non-response rate).

Some technologies are not very accessible to students at home or at school. Educators report little access to modems, CD-ROM, Internet, e-mail for their students, although "don't know" and non-responses for high-end technologies such as modems, CD-ROM, Internet, EdNet and e-mail ranged from 28.2%-40.4%.

Barriers to SURWAN Services. Few respondents (6.9%) reported direct experience with SURWAN in Section II of the survey and 52% reported they spent "no time" online in Section III. In contrast, the query about barriers to SURWAN in Section III was answered by roughly 25% of the sample, indicating that even though respondents did not use SURWAN and therefore did not directly experience barriers, they could still anticipate what those barriers might be if they were to try to access SURWAN.

Table 9 shows the percentage of SURWAN users who expressed significant or somewhat significant barriers to using SURWAN services.

Table 9
Percentage of SURWAN Users (N = 101) Expressing Significant or Somewhat Significant Barriers in Using SURWAN Services

Barriers	%
Inadequate access points	54.5
Computers not located in classroom	51.5
Inadequate hardware	53.0
Lack of technical support	45.3
Staff lacks training	63.5
SURWAN resources not useful	17.0

Most barriers are considered significant or somewhat significant by half or more of those who responded to the question. Training was the highest hurdle (63.5%), followed by over half of the respondents who also noted various hardware problems.

In addition to lack of direct access to the network, SURWAN content is still in development and not available through a simple, streamlined interface. Nonetheless, only 17% reported that SURWAN resources were not useful. About half of the respondents (44%) indicated that they did not know enough about the resources to make a judgment. Over the next five years, content development for delivery through the Web site (SURWEB) will provide an array of resources to every public school in the region, thus offering users more of a basis for judging the usefulness of information via telecommunications.

Services and Time Online with SURWAN

Table 10 displays responses about the specific types of SURWAN services used by respondents. As responses concerning access to SURWAN demonstrated, very few respondents and their students are currently using any of the SURWAN services. It is also possible that educators did not feel able to estimate student use. The range of reported users in this item is between 1% to 10% for teachers and 1-9% for students.

Table 10
Frequency and Percentage of Respondents and Their Estimates for Student Usage of SURWAN Services

	Respondents		Student Estimates	
	N	%	N	%
FTP	15	3.6	10	2.4
Listserv	15	3.6	4	1.0
News Groups	12	2.9	6	1.4
E-Mail	43	10.3	20	4.8
WWW	29	6.9	14	3.3
Telnet	17	4.1	11	2.6
Gopher	19	4.5	37	8.8
Create Docs	3	0.7	6	1.4
Other	4	1.0	4	1.0

The most prevalent use of SURWAN is reported for: E-Mail (10.3% Respondents and 4.8% Students), World Wide Web (6.9% and 3.3%), and Gopher (4.5% and 8.8%). Very few teachers (N=3) reported creating their own documents for dissemination via Internet. Teachers reported very few opportunities for students to create information (N=6). The survey indicates that general barriers of access, navigation and training that will enable users to create information resources must be addressed before users can become information providers.

A small percentage of respondents reported spending time online every week. About one-third gave no response to the item and 52% reported no time at all. The "no response" item about student use may indicate that teachers do not feel able to predict student use. Table 11 displays the amount of time that users reported spending online.

Table 11
Frequency and Percentage of Respondents and Their Estimates for Students Who Spend Time Per Week Online

	Respondents		Student Estimates	
	N	%	N	%
None	218	52.0	240	57.3
Less than 1 Hour	22	5.3	25	6.0
1-3 Hours	22	5.3	12	2.9
4-8 Hours	13	3.1	5	1.2
9-12 Hours	3	0.7	0	0
More than 12 Hours	1	0.2	1	0.2
No Response	139	33.2	136	32.5

Of all respondents and their students, 14.6% of the respondents and an estimated 10.3% of their students are currently spending some time online. Most of these respondents and their students are spending three hours or less a week on line (5.3% and 2.9%). About 5% of the teachers and an estimated 6% of their students spend less than an hour online a week; about 5% of the teachers and an estimated 3% of their students spend 1-3 hours a week on line. And about 3% of the teachers and an estimated 1% of the students spend more than 4 hours a week online. Only 1 person in the sample spent more than 12 hours on line and that respondent was one of the 4 systems operators who responded to the survey. About one-third of the sample did not respond to this item. If non-responses can be inferred to mean non-user status, then when added to those reporting "none" on the time queries, it is possible that most teachers (85%) and their students (90%) are not spending time online at all.

4. Use and Application of Information Resources

There is growing awareness that access to information is only the first step to educational opportunity. It is also important to ensure that teachers and students can evaluate and analyze information and create their own information in order to develop the full potentials of information technologies.

The survey attempts to assess the value that respondents place on information resources currently available for the classroom. The responses were grouped into three information categories, from the more traditional classroom media to the more innovative media sources: print, electronic and telecommunications.

Amount of Information Provided by Media. Respondents were asked to rank the amount of information provided by 15 different media from "too little" to "too much" information. It is assumed that the "about right" response indicates the most favorable attitude toward the amount of information in each medium. Table 12 displays the responses by type of media: print, electronic, or telecommunications.

Because SURWAN is very new to teachers in southeastern Utah, it is assumed that respondents are most familiar with traditional media such as instructional print and less familiar with new technologies represented by the Internet. Nevertheless, note the relatively low percentages of respondents who answered "don't know" or failed to indicate a response (11.5% - 22.4%) for print information resources.

In fact, respondents are generally as familiar with commercial and instructional television media as they are with print media (non-responses for these media are 17% and 14% respectively). Knowledge about telecommunications and other cutting edge technologies is still new to respondents. Large numbers of respondents do not feel knowledgeable enough to render an opinion about the adequacy of information provided by online services. The range of non-responses and "don't know" responses is between 40% for laserdisks to a high of 76.6% for listservers.

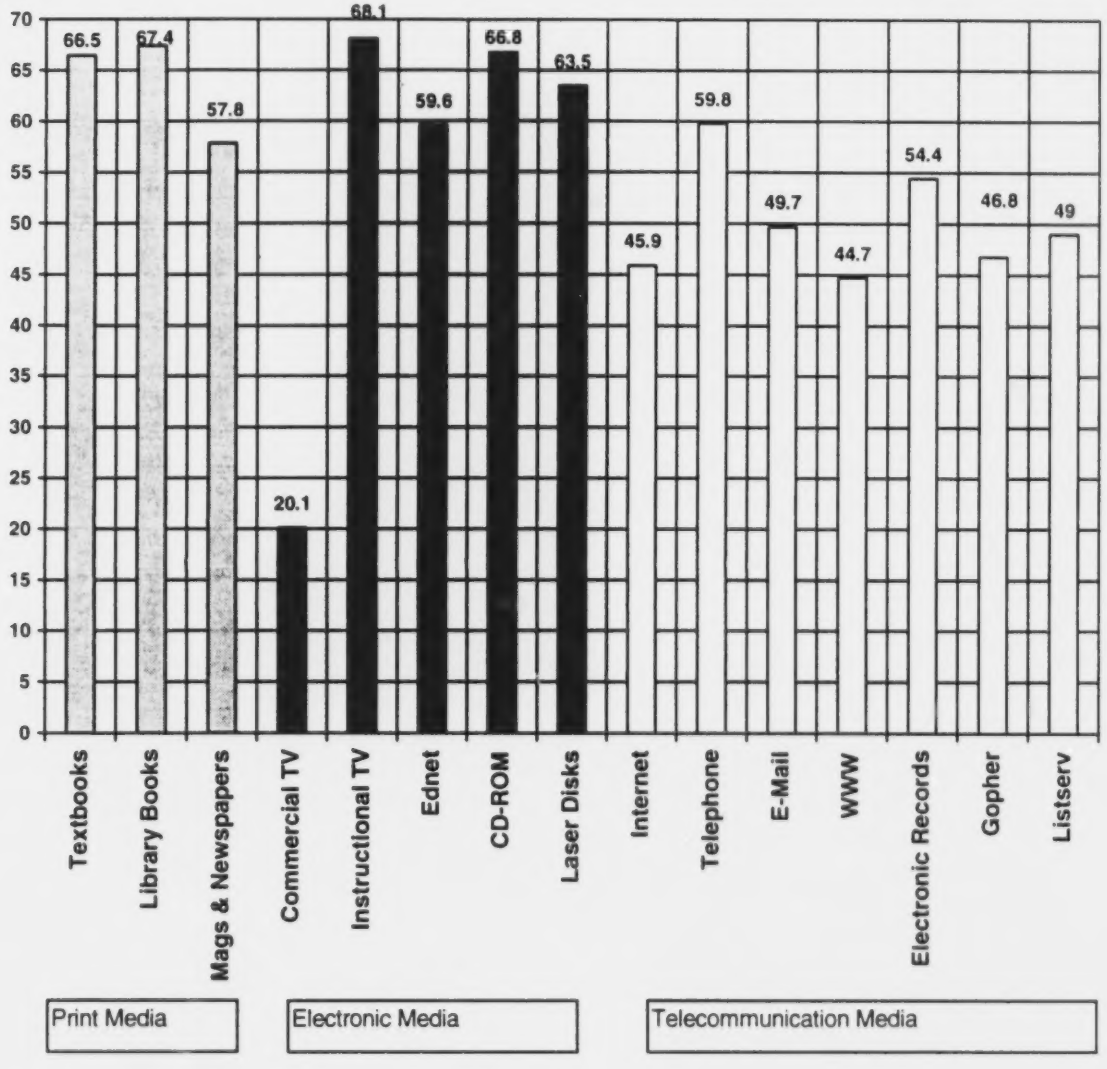
Table 12
Frequency and Percentage of Respondents Rating Adequacy of Information for Print, Electronic and Telecommunications Media (N = 419)

Type of Media	Too Little Information		About Right Amount of Information		Too Much Information		Don't Know or No Response	
	N	%	N	%	N	%	N	%
Print								
Textbooks	107	25.5	246	58.7	17	4.1	49	11.6
Library Books	115	27.4	250	59.7	6	1.4	48	11.5
Mag. & Newspaper	94	22.4	188	44.9	43	10.3	94	22.4
Electronic								
Commercial TV	156	37.2	70	16.7	122	29.1	71	17.0
Instructional TV	94	22.4	245	58.5	21	5.0	59	14.0
EdNet	58	13.8	102	24.3	11	2.6	248	49.3
CD-ROM	58	13.8	149	35.6	16	3.8	196	46.8
Laserdisks	64	15.3	132	31.5	12	2.9	211	40.5
Telecommunications								
Internet	53	12.6	89	21.2	52	12.4	225	53.7
Telephone	66	15.8	150	35.8	35	8.4	168	40.1
E-Mail	69	16.5	79	18.9	11	2.6	260	62.0
WWW	50	11.9	59	14.1	23	5.5	287	68.5
Electronic Records	48	11.5	62	14.8	4	1.0	305	72.8
Gopher	49	11.7	59	14.1	18	4.3	293	69.9
Listserv	42	10.0	49	11.7	9	2.1	319	76.6

Table 13 shows data from respondents only. In other words, non-responses and "don't knows" were eliminated from the data. The table represents the percentage of responses that reported the information to be "about right."

Traditional, established media such as textbooks (66.5%) and library books (67.4%) have high rankings. Television also fared well. Instructional television is highly valued (68.1%) with a slightly higher rating approximately equal to those who think that the information is "about right" in textbooks and library books. CD-ROM information is similarly high (66.8%). Conversely, the dubious value of commercial television in the classroom is reflected by its singularly low rating by 20.1% of respondents.

Table 13
Percentage of Respondents Indicating "About Right" Amount of Information by Media



The newest information technologies reflected by questions about telecommunications media, in general, are in the 40-50% range. It may be that the technologies are still too unfamiliar and experimental to demonstrate their potential as educational information systems.

Quality of Classroom Media: Ease of Use, Reliability, Availability and Frequency. The survey attempted to gather information about the relative value of various information technologies for classroom application. In addition to the amount of information provided by print, electronic and telecommunications media, the survey asked respondents to rate information technologies in terms of their ease of use, reliability, availability and frequency of use on the job. Table 14 displays the mean ratings for each of these characteristics

Table 14
Mean Ratings on Quality of Information for Print,
Electronic & Telecommunications Media
(Scale: 0 = not easy; 1 = somewhat easy;
and 2 = easy or 0 = never; 1 = sometimes; and 2 = often.)

Type of Media	Easy to Use	Reliable	Available	Frequency of Use
Print				
Textbooks	1.90	1.44	1.75	1.65
Library Books	1.67	1.44	1.69	1.49
Mags & Newspapers	1.68	1.14	1.45	1.02
Electronic				
Commercial TV	1.67	0.70	1.48	0.57
Instructional TV	1.58	1.60	1.48	0.98
EdNet	0.89	1.56	0.91	0.26
CD-ROM	1.29	1.50	1.21	0.57
Laserdisks	1.19	1.48	0.99	0.36
Telecommunications				
Internet	0.83	1.35	0.98	0.33
Telephone	1.79	1.26	1.64	1.07
E-Mail	1.12	1.18	1.02	0.35
WWW	0.77	1.24	0.71	0.22
Electronic Records	0.81	1.40	0.72	0.38
Gopher	0.84	1.24	0.79	0.27
Listservs	0.70	1.11	0.66	0.21

Ease of Use. Respondents ranked the more traditional print media and both commercial and instructional television "easy to use." These information technologies show the highest ratings (range=1.58 to 1.90) for ease of use. Telecommunications media such as Internet, World Wide Web, electronic student records, Gopher, and Listservers showed the lowest ratings on ease of use (range=0.70 to 0.84). Other electronic media (Ednet, CD ROM, and laserdisks) are rated in the mid-range of being "somewhat easy" to use.

Reliability. In addition to thinking that instructional television delivered the right amount of information, respondents found instructional television to be the most reliable of the 15 different media

listed (rating=1.60). Textbooks and library books are both ranked 1.44 in reliability. In fact, all print media and most electronic media (Ednet, CD ROM, and laserdisks) are closely clustered in the range of being "somewhat reliable" to "reliable." In addition to the lowest rating for the "right amount of information," commercial television also received the lowest rating of all media for reliability (rating=0.70). Cutting edge information technologies, such as the Internet, electronic student records were rated nearly as reliable as print — even though respondents reported very low availability of new technologies in their work (rating=0.72-0.98).

Availability. There is a wide gap between availability of traditional and new media. All print media as well as the telephone and both commercial and instructional television are generally available to respondents (ratings=1.45 to a high of 1.75 for textbooks). For textbooks, however, it is noteworthy that for about 3% of the respondents, textbooks are "not available" at all and for 16.9% of the respondents, textbooks are only "somewhat available." Remaining media are generally "somewhat available" to respondents (range=0.66 to Listservers to 1.21 for CD-ROM).

Frequency. When respondents were asked how frequently they use information media, their responses again showed large variability. Corresponding to data about availability, textbooks (rating=1.65) and library books (rating=1.49) are most often used "sometimes" or "often," followed by magazines and newspapers (rating=1.02), telephones (rating=1.01) and instructional television (rating=0.98). After that, Table 14 shows a sharp decline of frequency of use for other electronic and telecommunication media. Respondents report that they "seldom" use these hi-tech media (range=0.21 to 0.57).

Overall, the data support the general pattern that print media, television, and telephone are easy to use, more available, and most frequently used. The high ratings that respondents reported for instructional television indicates that the major cable, broadcast and satellite provide a classroom tool of comparable value to Southeast Utah educators as textbooks and library books.

The ranking of both instructional television and library materials over textbooks in some categories may also be due to the fact that many of the small, rural districts in the area struggle to find funding to buy new textbooks and to update old ones. For almost 20% of respondents, textbooks were only "somewhat" to "not" available.

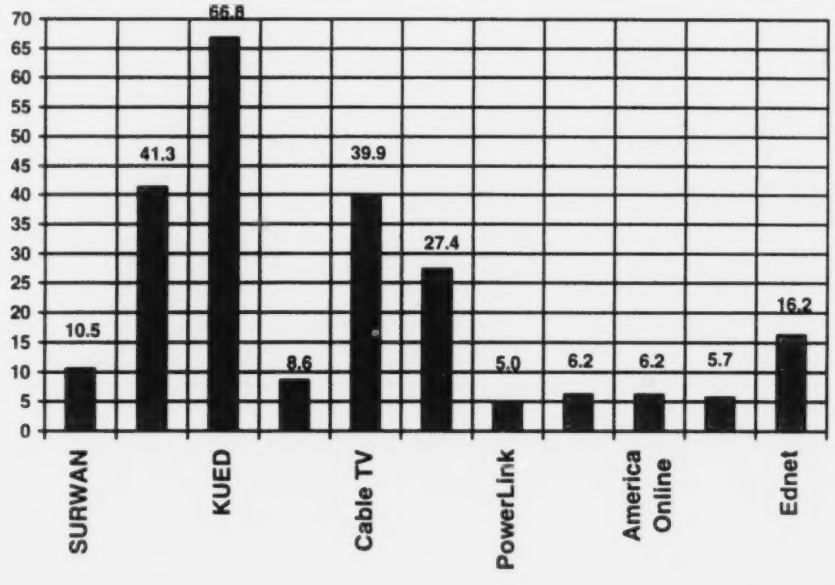
Although they report little access or use of new technologies, educators in this sample have high hopes for them. They are ranked as high or higher in reliability as print media in the survey. The potential for transferring student records electronically indicates a high level of trust (rating=1.40) that these documents will prove to be reliable.

The Use of Information Providers. Respondents in the state are using a variety of commercial and educational information providers, but instructional television services far surpass telecommunication providers in use. Table 15 shows the percentage of respondents who are using these information sources.

The state's educational television, KUED, is used by a majority of respondents (66.8%), particularly in elementary classrooms (see Table D16). KUED is by far the most prevalently used information source, corresponding with the responses for reliability, availability, and ease of use questions in Section IV. Channel 1 and Cable TV follow with a sizable number of respondents (41.3% and 39.9% respectively); followed by Discovery Network (at 27.4%) and Ednet (at 16.2%). The remaining information providers are much less frequently used by respondents.

According to responses to this item, SURWAN is being used by 10.5% of the respondents; it surpasses other sources such as KULC, America Online, Prodigy, Compuserve, etc. which are used by less than 10% of the respondents.

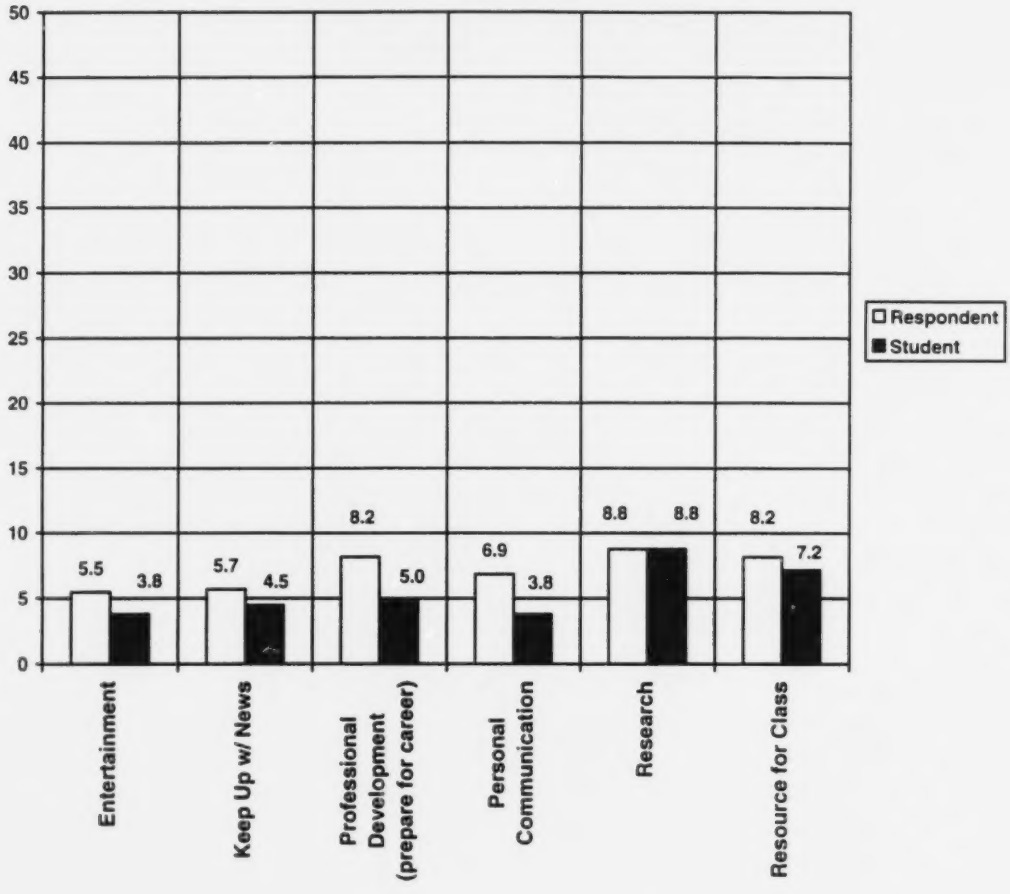
Table 15
Percentage of Respondents Who Use Commercial and Education Information Providers



Purposes of Information

SURWAN is still relatively new to southeastern Utah educators and its use is low at the present time. Only about 10% of the sample responded to the question about purposes for using SURWAN. For the 10% of respondents, "to research topics of interest" (8.8%), gathering resources for class" (8.2%), and "professional development" (8.2%) are the top reasons for using SURWAN information. For students, the educators rank "to research topics of interest" (8.8%) and "to gather resources for school" (7.2%) as the most prominent purposes for using the information from SURWAN. (See Table 16.)

Table 16
Percentage of Respondents and Their Estimates of Students' Purposes for Using SURWAN



"Personal communication" (6.9% educators/3.8% students), "to keep up with the news" (5.7% educators/4.5% students), and "for entertainment" (5.5% educators/3.8% students) rank progressively lower as reasons to use SURWAN information sources.

5. Producing Information for SURWAN

Approximately 10% of the respondents are currently using SURWAN. Of this group of SURWAN users, only one user has produced information, loaded it on SURWAN in any format and disseminated it. Apparently there are still significant barriers of access, training and other factors to stimulate SURWAN users to become information providers.

6. Value of SURWAN to the Community

In this section, the survey asked for respondents' attitudes toward technology in general and SURWAN in particular. Questions were weighted toward negative or positive values and respondents were asked to plot their answers on a "Strongly Disagree" to "Strongly Agree" Likert scale.

SURWAN Contribution to the Community. About 40% of respondents did not respond to direct questions about SURWAN. Again, this could be a problem of general unfamiliarity with the system and/or a lack of name recognition. Responses from the remaining 60% of the sample are expressed as a mean rating in Table 17.

Table 17
Respondent Mean Ratings on SURWAN Contributions to the Community
(Scale: 1 = strongly disagree; 2 = disagree; 3 = neither agree or disagree; 4 = agree; and 5 = strongly agree)

Value of SURWAN	Mean Rating
Stimulate investment by telephone & cable companies	3.15
Enhance business development	3.19
Make schools competitive	3.37
Result in higher real estate values	2.84

Overall, respondents do not have strong attitudes about SURWAN's contribution to the communities. The ratings are in the "neither agree or disagree" category. Slightly stronger views are expressed on the item that SURWAN will make schools more competitive (rating = 3.37).

General Attitudes About Technology. Survey items were designed to elicit negative and positive attitudes about a number of specific technology issues related to broad issues of equity, privacy, economic potential, and instructional outcomes. The non-response rate for these items was about 10%, much lower than that of the SURWAN-specific questions about technology (40%) in Table 17. Again, respondents seldom "strongly agreed" or "disagreed" with any of the statements, clustering responses more in the neutral territory of "neither agree or disagree" with slight movement toward either end of the continuum. Table 18 expresses mean ratings of respondents' attitudes about technology.

Table 18
Respondent Mean Ratings on Attitude About the Value of Technology
(Scale: 1 = Strongly Disagree; 2 = Disagree; 3 = Neither Agree or Disagree; 4 = Agree; 5 = Strongly Agree)

Information technology is the wave of the future	4.13
Internet is important to regional economy	2.95
Student won't get jobs if they don't know how to use the Internet	2.94
Business has right to sell online	2.75
Cost for investment of technology is too high	3.09
Internet will create wide gaps between "haves" & "have nots"	3.38
Technology will help solve social inequities	2.69
Computer hackers can gain access to the system and do damage	3.72
My privacy can be invaded by putting information into the system	3.45
The use of technology is a waste of time	1.78
Some students will misuse the system to get inappropriate information	3.64
Internet will destroy traditional reading and writing	2.45
Internet brings the wrong values into my community	2.63
Students will use Internet to play instead of learn	3.33
It is more valuable to communicate face-to-face	3.21

Two items stand out in this data. Respondents agree that "technology is the wave of the future" (rating = 4.13). They also disagree that the "use of technology is a waste of time" (rating = 1.78). However, they are less convinced about other economic potentials such as "the Internet is important to the economy in the region" (rating=2.95); "if students do not know how to use the

Internet, they won't get jobs in the future" (rating=2.94); "businesses have the right to sell things online" (rating=2.75).

In general, respondents take a neutral position on the question of technology access and social equity, i.e, that "the Internet will create wide gaps between the "haves" and the "have-nots" (rating=3.38), or that "technology will help to solve social inequities" (rating=2.69).

Privacy concerns elicited stronger responses from the sample. Respondents tend to agree that "computer hackers can gain access to the system and do damage" (rating=3.72) and that "my privacy can be invaded by putting information into the system" (rating=3.45). These higher ratings indicate concern about privacy issues.

Data on attitudes about the instructional outcomes of technology suggest that while respondents believe "some students will misuse the system to get inappropriate information, e.g., sex and violence" (rating =3.64) or that "some students will use the Internet at school to play, instead of learn" (rating =3.33); they do not necessarily believe that "the Internet brings the wrong values into my community" (rating = 2.63) or that "the use of the Internet will destroy traditional reading and writing" (rating = 2.45). Attitude on potential misuse of technology as well as on issues of privacy are more strongly felt by middle school and high school teachers than by elementary teachers (see Table D20).

V. Summary of Results

The *Baseline Survey of Educational Technology Access and Application in Southeastern Utah* was administered in Spring 1995 to determine attitudes, uses and application of information technologies by educators in southeast Utah in order to establish a baseline measure for educational technology efforts in the region.

Respondents. The sample of 419 respondents for this survey consists mainly of veteran elementary and secondary grade teachers. Almost all of them have a bachelor's degree and a majority of respondents have completed coursework beyond the bachelor's degree. Most of them have resided in the region for a decade or more; and a majority have children enrolled in the public school system.

Access to Technology. The survey asked respondents about their access to information technology hardware and software both at home and at work. Respondents were asked to speculate about the technology available to students at home and at school. Results were as follows:

- Most respondents and their students have access to more communication technologies at work than at home.

- Over 90% of respondents have computers at work and 63% have computers at home.

- About 30% of the respondents have access to a variety of other technology tools at work, such as CD-ROM, E-Mail, and Internet access.

- Only 10-15% have access to higher-end technologies at work, such as video on the computer, telecommunication software, and satellite broadcasts.

- Telephone access is a problem for 20% of respondents at home and 30% at work.

- Roughly 10% of respondents currently use SURWAN.

- Respondents in southeastern Utah have online access to the Internet through a variety of commercial providers: PowerLink (5%); Prodigy (6.2%), America Online (6.2%) and Compuserve (5.7%). By way of comparison, 17% of the total North American population (37 million) over the age of 16 is estimated to have access to the Internet either at home, work, or through a commercial service, according to Nielsen Media Research (*Washington Post Weekly*. November 6-12, 1995, p. 87).

Current Use of Information Resources. The survey attempted to assess respondents' attitudes about various media by asking them to rank media in terms of: the right amount of information; availability; reliability; and frequency of use.

- A majority of respondents (60%) indicated that print media, instructional television, and CD-ROM provide "about the right amount" of information; 40%-75% of respondents did not render an opinion about the adequacy of information provided by new communications media, e.g., the World Wide Web, listservers, and others.

- Print media, instructional television and the telephone are rated as "easy to use," and "readily available." Print, video, and the telephone are used more often than other electronic and telecommunication media. Even though respondents report very little experience with high-tech media, they rate them to be nearly as reliable as print media.

- Although rated "easy to use," and "available," commercial television had the lowest potential for classroom use, ranking lowest in all categories in reliability and frequency of use. With over 98% of U.S. homes consistently reporting access to at least one television set in Nielson polls over the last decade, commercial television is the most available information technology. Its low potential for classroom application must be solely due to content issues.

- Between 6%-10% of respondents are aware of SURWAN and are currently using its services. Researching topics of interest, gathering resources for class, and professional development are the reasons most frequently mentioned for using SURWAN.

Attitudes about Technology. In order to exploit the potential for technology in the region, educators must accommodate local attitudes about the uses of information technologies. The survey attempted to assess some general attitudes about the SURWAN system in particular and information technologies in general.

- Respondents' attitudes about technology in general are "neutral" with regard to the potential benefits and cost of technology, its contribution to regional economy, the danger of creating social inequities, its value to students, or the potential of bringing in the wrong values for students.

- The higher non-response rate (40%) to specific questions about SURWAN indicate that respondents are still generally unfamiliar with the system, at least by name.

- Respondents agree that technology is the wave of the future and there was some agreement regarding the potential of misuse.

The *Baseline Survey of Educational Technology Access and Application in Southeastern Utah* establishes a baseline measure for technology use by teachers and administrators in southeastern Utah. As the SURWAN project and other efforts make more technology tools available in the region, and as the Southeastern Utah Education Service Center provides more curriculum and staff development to use the existing technology infrastructure, the survey will be administered again to characterize changes in technology use and application by users in southeastern Utah.

Appendix A

The Southeastern Education Service Center
Vision Plan

The Southeastern Education Service Center *Vision Plan*

In January 1993, a three-year technology vision was developed for the southeastern region of Utah under the direction of the Southeastern Education Service Center (SESC) Board of Directors and the Regional Brain Share (RBS) Committee. This southeastern technology vision builds upon Utah's Educational Technology Initiative, a comprehensive plan for all the state's educational agencies. The southeastern region's "Vision Document" is used as the guide for planning of technology integration into the curriculum through 1996 (Southeastern Education Service Center, January 28-29, 1993.)

Members of the SESC Board of Directors are the four district superintendents, other regional educators, and community representatives from business and industry. The Regional Brain Share (RBS) is comprised of the educational technology directors, distance learning supervisors and data service directors from each county. RBS is the body directly responsible for the design and implementation of the project proposed to the Rural Electrification Administration for improved distance education in the region. The SESC Board works under the district's non-profit corporation status and has a 10-year history of planning that formalizes relationships between educational entities and community partnerships in the region.

The Vision Document for educational technology in the Southeastern Education Service Center region of Utah was planned in five phases: In 1989, Phase I constructed EdNet, an interactive microwave system funded by the National Science Foundation and state monies and operated by the Utah Education Network; Phase II constructed the regional Wide Area Network (WAN) backbone; Phase III is the Southeastern Utah and Regional Wide Area Network (SURWAN), which proposes to address the "last mile" issue of linking all K-12 schools in the southeastern region of Utah to the WAN; Phase IV will use a portion of a $4.2 million Title III grant to the College of Eastern Utah to double the microwave signal at each hub in order to provide two-way video and data transmission at each site in SURWAN; Phase V plans to open the system to the communities in southeastern Utah by linking the region's public library system to the WAN.

The SESC Board of Directors built the first two phases of the overall regional technology plan for distance education from private, foundation and corporate support. The proposed project, the Southeastern Utah Regional Wide Area Network (SURWAN) is Phase III. In Phase I, the Board worked with the College of Eastern Utah to secure state monies and a grant for $1.7 million in one-time awards from the National Science Foundation. Phase II was completed with corporate support raised by the Board of Directors: $110,000 from IBM, $80,000 from Novell and $40,000 from state research and development monies . In addition, the four districts also pledged $10,000 in state educational monies to complete Phase II for a total of $230,000 of Phase II support.

The Board also reached out to the community for technical assistance partnerships. In addition to the local colleges and universities, Southeastern Education Service Center's long-term partnerships with U.S. West Corporation, a major telecommunications corporation in the southeast region of Utah,

and Far West Laboratory, a regional, non-profit, federally-funded, educational laboratory based in San Francisco leverages these organization's considerable technical and educational expertise.

In 1994, the Rural Electrification Administration provided partial funding for the completion of a sophisticated computer network for the Southeastern Utah Regional Wide Area Network (SURWAN).

Appendix B

SURWAN Evaluation Instrument

SOUTHEASTERN UTAH REGIONAL WIDE AREA NETWORK
USER SURVEY

SECTION I. BACKGROUND INFORMATION

Please tell us a little about yourself. These responses are anonymous but will help us to learn more about how SURWAN can better serve the needs of your community.

1. *Please check appropriate role/professional affiliation:*

   ❒Grade K-3 Elementary Teacher
   ❒Grade 4-6 Elementary Teacher
   ❒Middle School Teacher
   ❒High School Teacher
   ❒Higher Education Teacher
   ❒School Administrator
   ❒Business Person
   ❒Technology Specialist
   ❒Parent
   ❒Other:_____

2. *How many years have you been active in your profession?* ***If you are a parent or a student, go to question 3.***

   ❒1-3 years
   ❒4-6 years
   ❒7-9 years
   ❒10-15 years
   ❒Over 15 Years

3. *Your age:*

   ❒20-29
   ❒30-39
   ❒40-49
   ❒50-59
   ❒Over 60

4. *Gender:*

   ❒Male
   ❒Female

5. *Your highest level of schooling:*

   ❒Attended High School
   ❒High School Graduate
   ❒Some College
   ❒BA/BS degree
   ❒Attended Post-College Classes
   ❒MA/MS degree
   ❒Ph.D/Ed.D degree
   ❒Other:_____

6. *Where do you reside?*

   ❒San Juan County
   ❒Emery County
   ❒Grand County
   ❒Carbon County
   ❒Other_____

7. *How long have you lived in this County?*

   ❒less than 1 year
   ❒1-3 years
   ❒4-8 years
   ❒9-15 years
   ❒over 15 years

8. *Do you currently have children in the public school system?*

   ❒No
   ❒Yes

SECTION II. AWARENESS OF SURWAN NETWORK

1. *Have you heard of the SURWAN telecommunications network?*

   ❒No ***IF NO, GO TO SECTION III. ACCESS TO SURWAN.***
   ❒Yes ***IF YES, describe SURWAN in the space below:***

_____

2. *Have you tried to use the SURWAN network?*

❒No ***IF NO, GO TO SECTION III. ACCESS TO SURWAN.***
❒Yes ***IF YES, describe your experience using SURWAN in the space below:***

3. *Have you been involved in planning for the SURWAN telecommunication network?*

❒No
❒Yes ***IF YES, describe your role in the space below:***

4. *Have you received training about the SURWAN Network?*

❒No
❒Yes ***IF YES, describe your training in the space below:***

5. *Where did you hear about SURWAN?* Check as many of the following that apply:

❒My supervisor/principal
❒My colleagues
❒A parent
❒My child
❒At a conference
❒In the newspaper
❒Other:_____

SECTION III. ACCESS TO SURWAN

1. *I have access to the following technology tools* **on the job.** *(Check all items that apply).*

❒A computer
❒A modem
❒A telephone
❒A computer with enough memory/speed
❒A CD-ROM drive on the computer
❒Telecommunications software
❒A computer interface to access the Internet
❒Video over the computer
❒Satellite broadcasts
❒E-mail
❒Other:_____

2. *I have access to the following technology tools* ***at home****. (Check all items that apply).*

❒A computer
❒A modem
❒A telephone
❒A computer with enough memory/speed
❒A CD-ROM drive on the computer
❒Telecommunications software
❒A computer interface to access the Internet
❒Video over the computer
❒Satellite broadcasts
❒E-mail
❒Other:_____

3. *How many kindergarten through 12th students in your community do you believe have access to the following **at school**? (Check all items that apply).*

	None	Very Few	Some	Most	Don't Know
Computer					
Modem					
Telephone					
CD-ROM					
Internet					
Videocassettes					
Ednet					
E-Mail					
Video Cameras					

4. *How many students (K-12, community college) in your community do you believe have access to the following **at home**? (Check all items that apply).*

	None	Very Few	Some	Most	Don't Know
Computer					
Modem					
Telephone					
CD-ROM					
Internet					
Videocassettes					
Ednet					
E-Mail					
Video Cameras					

5. *How significant are these barriers to using SURWAN? (Check all items that apply). **If you do NOT have access to SURWAN services, skip to SECTION IV. INFORMATION RESOURCES.***

	Not Significant	Somewhat Significant	Significant	Don't Know
Inadequate access points in my work- place/home (phone, power, other outlets)				
Computers are not located in the classroom				
Inadequate hardware (too little, too old, not enough memory)				
Lack of technical support for SURWAN				
The staff does not have enough training to know what to do with SURWAN				
The resources on SURWAN are not useful				

6. *I use the following SURWAN services:*

- ❒FTP (file transfer protocol)
- ❒Listserv
- ❒Newsgroups
- ❒E-Mail
- ❒World Wide Web
- ❒Telnet
- ❒Gopher
- ❒I create my own documents and put them on-line
- ❒Other:_____

7. *My students use the following SURWAN services:*

- ❒FTP (file transfer protocol)
- ❒Listserv
- ❒Newsgroups
- ❒E-Mail
- ❒World Wide Web
- ❒Telnet
- ❒Gopher
- ❒I create my own documents and put them on-line
- ❒Other:_____

8. *On the average, how much time a week do you spend on-line?*

- ❒ *None*
- ❒ *Less than an hour*
- ❒ *1-3 hours*
- ❒ *4-8 hours*
- ❒ *9-12 hours*
- ❒ *More than 12 hours*

9. *On the average, how much time a week do **your students** spend on-line?*

- ❒ *None*
- ❒ *Less than an hour*
- ❒ *1-3 hours*
- ❒ *4-8 hours*
- ❒ *9-12 hours*
- ❒ *More than 12 hours*

SECTION IV. INFORMATION RESOURCES: USE & APPLICATION

1. *How would you characterize the **AMOUNT OF INFORMATION** each of the following media provides?*

	Too Little Information	About Right	Too Much Information	Don't Know
Textbooks				
Library Books				
Commercial Television				
Instructional Television				
Internet				
Ednet				
Telephone				
Popular Magazines and Newspapers				
E-Mail				
World Wide Web				
Electronic Student Record System				
Gopher				
Listserver Groups				
CD-ROM				
Laser Discs				
Other				

2. *How **EASY TO USE** are the following information media?*

	Not Easy	Somewhat Easy	Easy	Don't Know
Textbooks				
Library Books				
Commercial Television				
Instructional Television				
Internet				
Ednet				
Telephone				
Popular Magazines and Newspapers				
E-Mail				
World Wide Web				
Electronic Student Record System				
Gopher				
Listserver Groups				
CD-ROM				
Laser Discs				
Other				

3. *How **RELIABLE** is the information provided by the following information media?*

	Not Reliable	Somewhat Reliable	Reliable	Don't Know
Textbooks				
Library Books				
Commercial Television				
Instructional Television				
Internet				
Ednet				
Telephone				
Popular Magazines and Newspapers				
E-Mail				
World Wide Web				
Electronic Student Record System				
Gopher				
Listserver Groups				
CD-ROM				
Laser Discs				
Other				

4. *How **AVAILABLE** are the following types of information resources at your job?*

	Not Available	Somewhat Available	Available	Don't Know
Textbooks				
Library Books				
Commercial Television				
Instructional Television				
Internet				
Ednet				
Telephone				
Popular Magazines and Newspapers				
E-Mail				
World Wide Web				
Electronic Student Record System				
Gopher				
Listserver Groups				
CD-ROM				
Laser Discs				
Other				

5. *How **OFTEN** do you use the following information sources on your job?*

	Never	Sometimes	Often	Don't Know
Textbooks				
Library Books				
Commercial Television				
Instructional Television				
Internet				
Ednet				
Telephone				
Popular Magazines and Newspapers				
E-Mail				
World Wide Web				
Electronic Student Record System				
Gopher				
Listserver Groups				
Laser Discs				
CD-ROM				
Other				

6. *Which of the following commercial or educational information providers do you use?*

❒SURWAN
❒Channel One
❒KUED
❒KULC
❒Cable TV
❒Discovery Network
❒PowerLink
❒Prodigy
❒America On-line
❒CompuServe
❒EdNet
❒Other:_____

7. *What purposes do you have for using information from SURWAN?* (Check as many as apply). ***If you do not use SURWAN, SKIP TO SECTION VI. THE VALUE OF SURWAN.***

❒entertainment
❒to keep up with news
❒for professional development
❒for personal communication
❒to research topics of interest
❒to gather resources for my classroom or office
❒Other:_____

8. *What purposes do **students** have for using information from SURWAN?*

❒for entertainment
❒to keep up with news
❒to prepare for careers
❒for personal communication
❒to research topics of interest
❒to gather resources for school
❒Other:_____

9. *To what extent has SURWAN made more information resources available to you?*

❒*to a great extent*
❒*to some extent*
❒*not at all*

SECTION V. PRODUCING INFORMATION FOR SURWAN

1. *Have you produced information and loaded it on the SURWAN system?*

   ❒No *If no, please proceed to SECTION VI. THE VALUE OF SURWAN.*
   ❒Yes

2. *Have you created information in any of the following formats? (Check all that apply).*

   ❒Printed text files
   ❒Graphics Files
   ❒Quicktime movies/video
   ❒Audio Files
   ❒World Wide Web Home Pages
   ❒Other:_____

3. *Have you disseminated the information you created on any of the following? (Check all that apply).*

   ❒FTP (File Transfer Protocol)
   ❒ Listserv
   ❒Newsgroups
   ❒World Wide Web Home Pages
   ❒Gopher
   ❒Meetings or presentations
   ❒Print publication (e.g., an article in a professional journal, etc.)
   ❒Personal video conferencing (e.g., CU-See Me)
   ❒Other:_____

4 *Have students created information in any of the following formats? (Check all that apply).*

   ❒Printed text files
   ❒Graphics Files
   ❒Quicktime movies/video
   ❒Audio Files
   ❒World Wide Web Home Pages

5. *Have students disseminated the information they created on any of the following? (Check all that apply).*

   ❒FTP (File Transfer Protocol)
   ❒ Listserv
   ❒Newsgroups
   ❒World Wide Web Home Pages
   ❒Gopher
   ❒Meetings or presentations
   ❒Print publication (e.g., an article in a professional journal, etc.)
   ❒Personal video conferencing (e.g., CU-See Me)
   ❒Other:_____

VI. THE VALUE OF SURWAN TO THE COMMUNITY

1. *Please indicate your agreement or disagreement with the following statements about SURWAN.*

	Strongly Disagree	Disagree	Neither Agree or Disagree	Agree	Strongly Agree
SURWAN stimulates the telephone and cable companies to invest in our region.					
SURWAN will enhance business development in our region.					
SURWAN will make our schools competitive with those in urban areas.					
SURWAN will result in higher real estate value.					

2. *Please indicate your agreement or disagreement with the following statements about technology.*

	Strongly Disagree	Disagree	Neither Agree or Disagree	Agree	Strongly Agree
Information technology is the wave of the future.					
Internet will create wide gaps between the "haves" and the "have-nots."					
Technology will help to solve social inequities.					
The cost of investment for technology is too high.					
The use of technology is a waste of time.					
Some students will misuse the system to get inappropriate information, e.g., sex and violence.					
Computer hackers can gain access to the system and do damage.					
My privacy can be invaded by putting information into the system.					
Business have the right to sell things on-line.					
The Internet brings the wrong values into my community.					
It is more valuable to communicate face-to-face than on-line.					
The use of the Internet will destroy traditional reading and writing.					
Some students will use the Internet at school to play, instead of learn.					
If students do not know how to use the Internet, they won't get jobs in the future.					
The Internet is important to the economy in the region.					

Appendix C

Results by County

Table C1
Frequency and Percentage of Teachers by Grade Level by County

	San Juan		Emery		Grand		Carbon		Other	
	N	%	N	%	N	%	N	%	N	%
Grades K-3	16	18.6	40	30.3	11	26.8	38	27.9	3	37.5
Grades 4-6	15	17.4	30	22.7	10	24.4	21	15.4	2	25.0
Middle School	18	20.9	17	12.9	1	2.4	29	21.3	1	12.5
High School	25	29.1	35	26.5	11	26.8	35	25.7	1	12.5
Total	74	86.0	122	92.4	33	80.4	123	90.3	7	87.5

Table C2
Frequency and Percentage of Respondents by Years of Experience by County

	San Juan		Emery		Grand		Carbon		Other	
	N	%	N	%	N	%	N	%	N	%
1-3 yrs	18	20.9	10	7.6	8	19.5	14	10.3	0	0
4-6 yrs	9	10.5	12	9.1	6	14.6	18	13.2	1	12.5
7-9 yrs	5	5.8	21	15.9	7	17.1	19	14.0	0	0
10-15 yrs	16	18.6	31	23.5	5	12.2	37	27.2	2	25.0
Over 15 yrs	36	41.9	58	43.9	15	36.6	48	35.3	5	62.5
Total	86	100	132	100	41	100	136	100	9	100

Table C3
Frequency and Percentage of Respondents by Age Groups by County

	San Juan		Emery		Grand		Carbon		Other	
	N	%	N	%	N	%	N	%	N	%
20-29 yrs	8	9.5	8	6.1	7	17.1	11	8.1	0	0
30-39 yrs	18	21.4	30	22.7	9	22.0	27	19.9	2	2.50
40-49 yrs	31	36.9	58	43.9	17	41.5	58	42.6	5	62.5
50-59 yrs	26	31.0	27	20.5	7	17.1	38	27.9	1	12.5
Over 60 yrs	1	1.2	9	6.8	1	2.4	2	1.5	0	0
Total	84	100	132	100	41	100	136	100	8	87.5

Table C4
Frequency and Percentage of Respondents by Gender by County

	San Juan		Emery		Grand		Carbon		Other	
	N	%	N	%	N	%	N	%	N	%
Male	37	43.5	52	39.4	16	39.0	35	25.9	4	50.0
Female	48	56.5	80	60.6	25	61.0	100	74.1	4	50.0
Total	85	100	132	100	41	100	135	100	8	100

Table C5
Frequency and Percentage of Respondents by Education Level by County

	San Juan		Emery		Grand		Carbon		Other	
	N	%	N	%	N	%	N	%	N	%
High School	0	0	0	0	0	0	1	0.7	1	12.5
High School Grad	1	1.2	0	0	0	0	0	0	0	0
Some College	3	3.5	1	0.8	0	0	3	2.2	0	0
BA/BS	26	30.6	34	26.0	10	24.4	36	26.5	2	25.0
BA+	33	38.3	62	47.3	15	36.6	70	51.5	2	25.0
MA/MS	21	24.7	33	25.2	14	34.1	24	17.6	3	37.5
Ph.D/Ed.D	1	1.2	1	0.8	2	4.9	2	1.5	0	0
Total	85	100	130	100	41	100	136	100	8	100

Table C6
Frequency and Percentage of Respondents by Length of Residence by County

	San Juan		Emery		Grand		Carbon		Other	
	N	%	N	%	N	%	N	%	N	%
Less than 1 yr	7	8.2	3	2.3	3	7.3	7	5.2	0	0
1-3 yrs	4	4.7	6	4.5	8	19.5	7	5.2	0	0
4-8 yrs	6	7.1	8	6.1	5	12.2	11	8.1	0	0
9-15 yrs	12	14.1	22	16.7	8	19.5	22	16.3	0	0
Over 15 yrs	55	64.7	92	69.7	17	41.5	88	65.2	6	100
Total	84	98.8	131	99.3	41	100	135	100	6	100

Table C7
Frequency and Percentage of Residents by Children in the Public School System by County

	San Juan		Emery		Grand		Carbon		Other	
	N	%	N	%	N	%	N	%	N	%
Yes	49	57.0	92	69.7	19	46.3	78	57.4	4	50.0
No	37	43.0	40	30.3	22	53.7	58	42.6	4	50.0
Total	86	100	132	100	41	100	136	100	8	100

Table C8
Percentage of Respondents with Access to Technology at Work by County

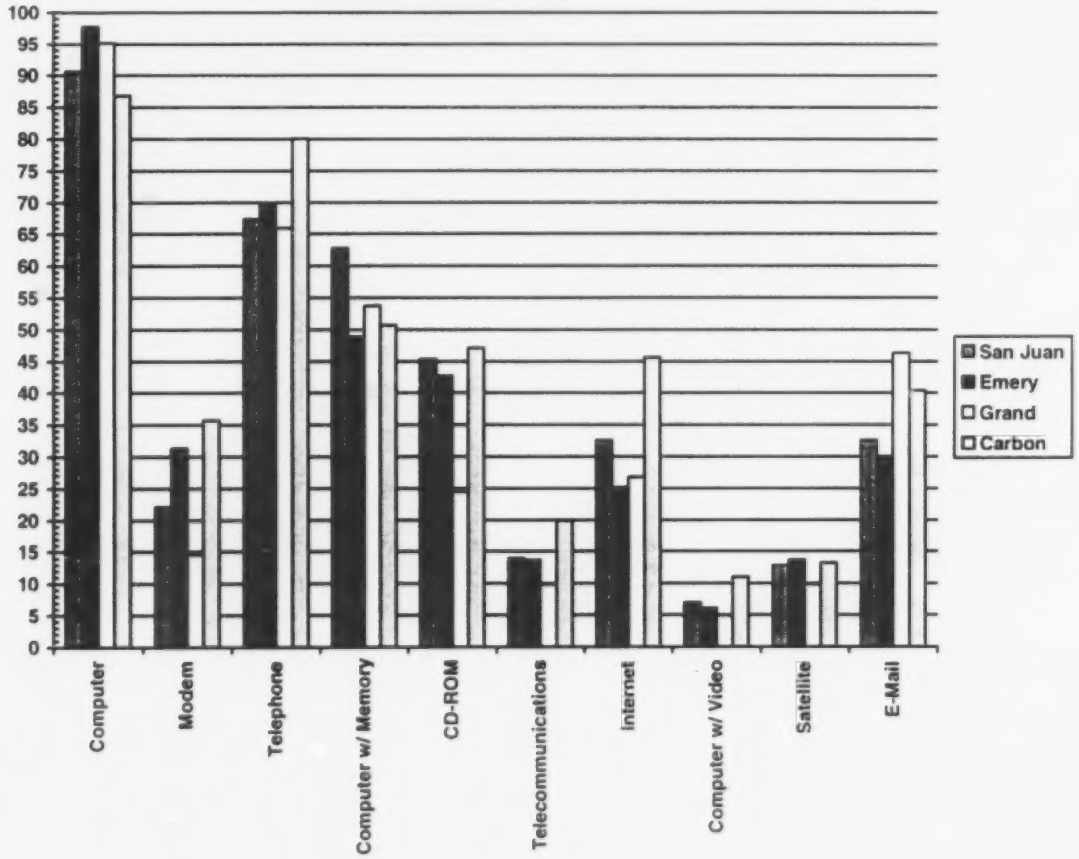


Table C9
Mean Ratings of Estimated Student Access to Technology at Home by County
(0 = None; 1 = Very Few; 2 = Some; 3 = Most)

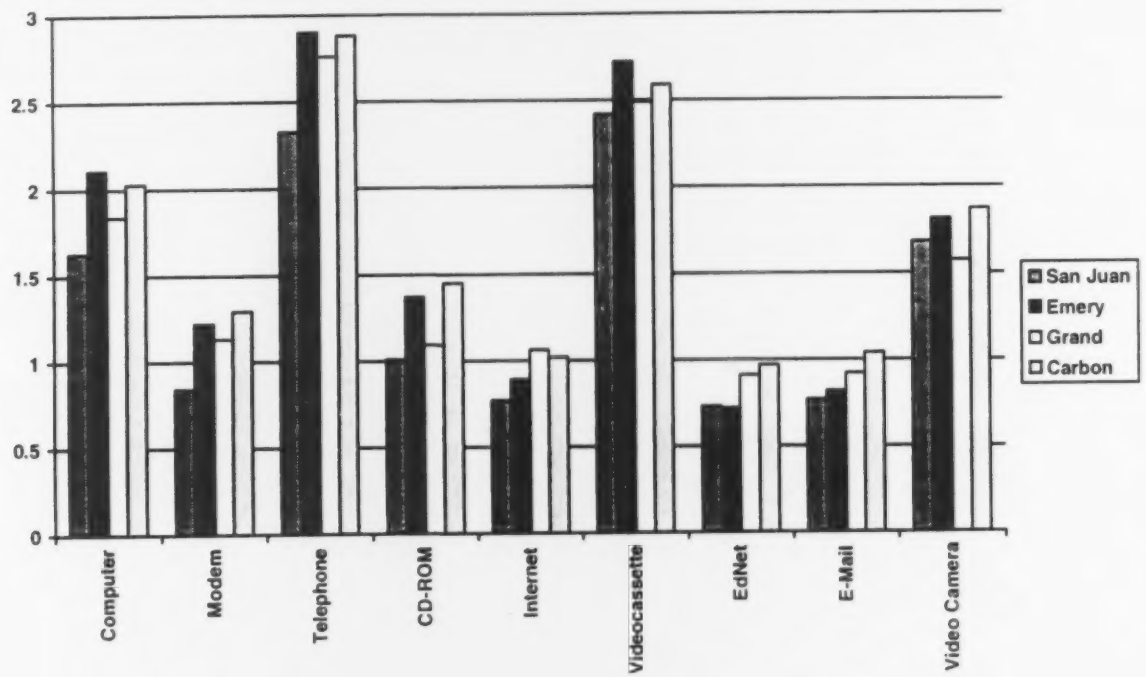


Table C10
Percentage of Respondents with Access to Technology at Home by County
(0 = None; 1 = Very Few; 2 = Some; 3 = Most)

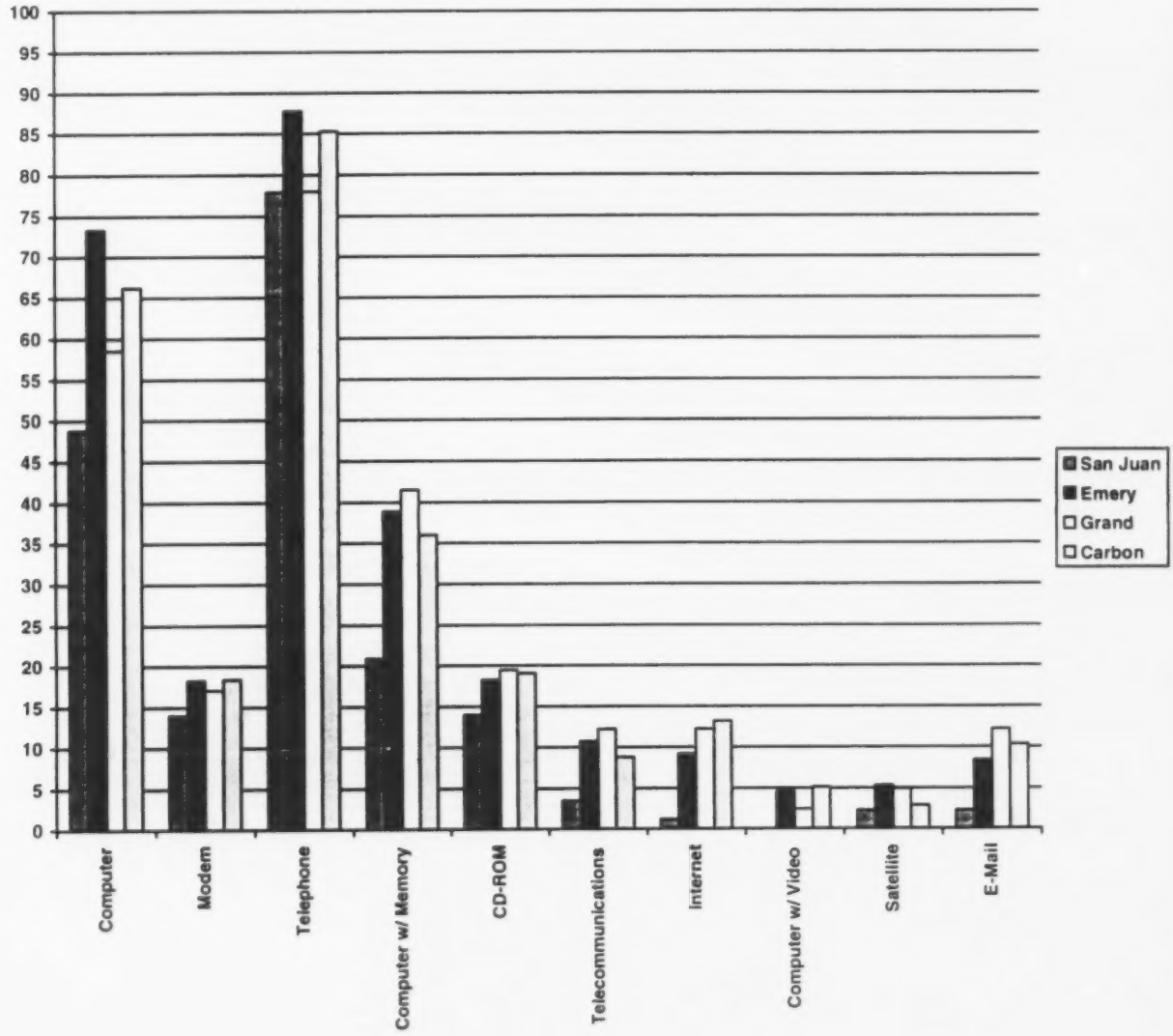


Table C11
Mean Ratings of Estimated Student Access to Technology at School by County
(0 = None; 1 = Very Few; 2 = Some; 3 = Most)

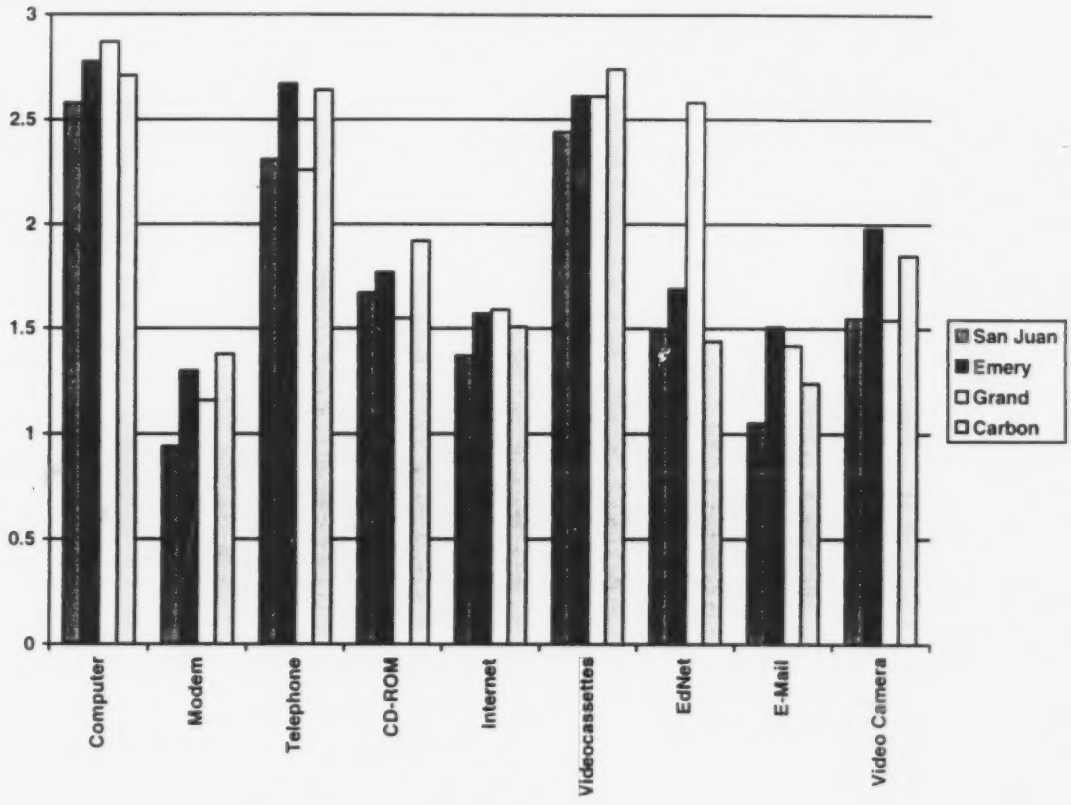


Table C12
Percentage of Respondents Indicating "About Right" Amount of Information
by Print Media by County

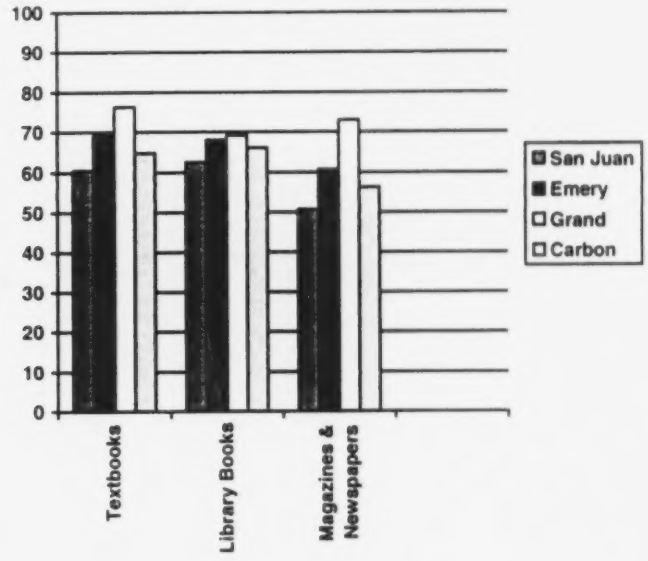


Table C13
Percentage of Respondents Indicating "About Right" Amount of Information
by Electronic Media by County

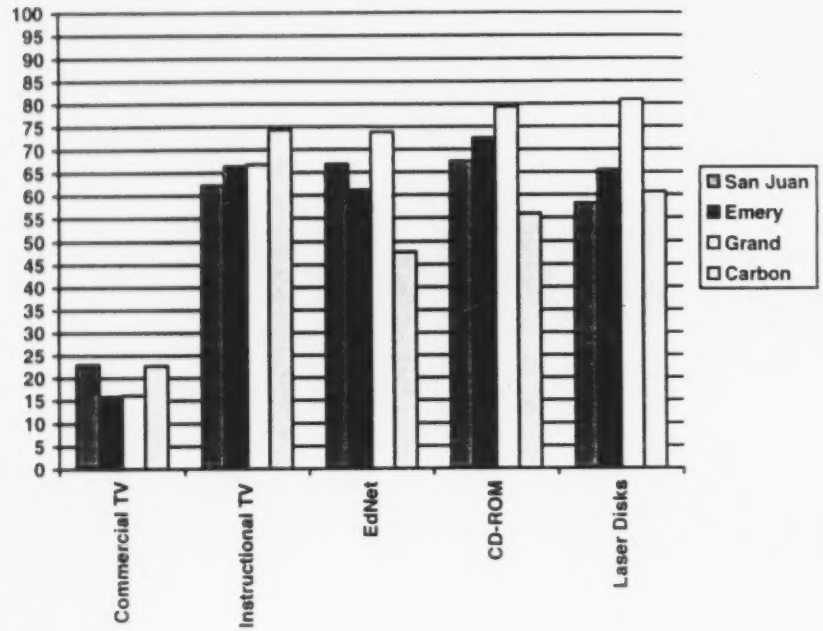


Table C14
Percentage of Respondents Indicating "About Right" Amount of Information by Telecommunication Media by County

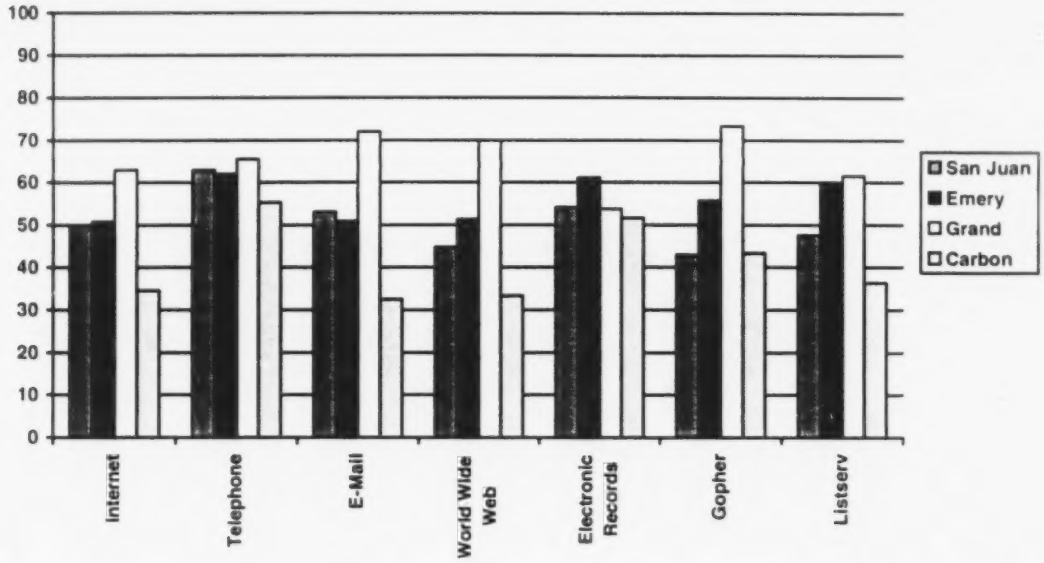


Table C15
Percentage of SAN JUAN Respondent Ratings on Ease of Use of Print, Electronic & Telecommunications Media

Type of Media	Not Easy	Somewhat Easy	Easy	Don't Know/ No Response
Print				
Textbooks	7.3	20.7	68.3	3.7
Library Books	3.7	24.4	69.5	2.4
Magazines & Newspapers	2.5	23.5	64.2	9.9
Electronic				
Commercial TV	8.5	13.4	67.1	11.0
Instructional TV	4.9	28.0	59.8	7.3
EdNet	15.4	19.2	15.4	50.0
CD-ROM	5.1	30.8	30.8	33.3
Laser Disks	7.7	28.2	23.1	41.0
Telecommunications				
Internet	19.2	21.8	12.8	46.2
Telephone	6.3	7.5	76.3	10.0
E-Mail	13.8	12.5	21.3	52.5
World Wide Web	15.4	17.9	7.7	59.0
Electronic Records	12.8	11.5	10.3	65.4
Gopher	15.6	18.2	7.8	58.4
Listerv	14.3	13.0	5.2	67.5

Table C16
Percentage of EMERY Respondent Ratings on Ease of Use of Print, Electronic & Telecommunications Media

Type of Media	Not Easy	Somewhat Easy	Easy	Don't Know/ No Response
Print				
Textbooks	2.4	33.9	62.1	1.6
Library Books	3.2	29.8	66.1	0.8
Magazines & Newspapers	3.3	22.3	69.4	5.0
Electronic				
Commercial TV	9.2	14.2	71.7	5.0
Instructional TV	4.1	28.1	65.3	2.5
EdNet	16.0	19.3	13.4	51.3
CD-ROM	9.3	23.7	32.2	34.7
Laser Disks	12.9	12.1	16.4	58.6
Telecommunications				
Internet	18.5	19.3	15.3	47.1
Telephone	4.1	6.6	80.2	9.1
E-Mail	13.0	16.5	19.1	51.3
World Wide Web	13.8	8.6	6.9	70.7
Electronic Records	12.0	12.8	6.8	68.4
Gopher	12.2	12.2	12.2	63.5
Listerv	11.1	12.8	4.3	71.8

Table C17
Percentage of GRAND Respondent Ratings on Ease of Use of Print, Electronic & Telecommunications Media

Type of Media	Not Easy	Somewhat Easy	Easy	Don't Know/ No Response
Print				
Textbooks	0	42.1	57.9	0
Library Books	0	13.3	66.7	0
Magazines & Newspapers	2.6	23.7	68.4	5.3
Electronic				
Commercial TV	13.5	8.1	75.7	2.7
Instructional TV	10.3	25.6	59.0	5.1
EdNet	13.2	47.4	15.8	23.7
CD-ROM	2.6	42.1	34.2	21.1
Laser Disks	5.3	31.6	36.8	26.3
Telecommunications				
Internet	10.5	63.2	15.8	10.5
Telephone	0	13.9	77.8	8.3
E-Mail	7.9	34.2	44.7	13.2
World Wide Web	13.5	35.1	10.8	40.5
Electronic Records	13.2	23.7	0	63.2
Gopher	7.9	31.6	10.5	50.0
Listerv	7.9	26.3	5.3	60.5

Table C18
Percentage of CARBON Respondent Ratings on Ease of Use of Print, Electronic & Telecommunications Media

Type of Media	Not Easy	Somewhat Easy	Easy	Don't Know/ No Response
Print				
Textbooks	2.4	20.0	75.2	2.4
Library Books	3.2	17.6	76.8	2.4
Magazines & Newspapers	5.7	17.1	70.7	6.5
Electronic				
Commercial TV	8.9	15.4	69.6	5.7
Instructional TV	5.6	28.2	62.9	3.2
EdNet	20.7	13.8	6.9	57.8
CD-ROM	10.8	32.5	21.7	35.0
Laser Disks	11.7	35.0	22.5	30.8
Telecommunications				
Internet	28.0	17.8	8.5	44.9
Telephone	6.7	5.8	68.3	19.2
E-Mail	13.8	19.8	13.8	52.6
World Wide Web	15.7	11.3	6.1	67.0
Electronic Records	12.9	8.6	8.6	69.8
Gopher	14.7	12.9	4.3	68.1
Listerv	12.9	6.9	4.3	75.9

Table C19
Percentage of SAN JUAN Respondent Ratings on Reliability of Print, Electronic & Telecommunications Media

Type of Media	Not Reliable	Somewhat Reliable	Reliable	Don't Know/ No Response
Print				
Textbooks	6.0	42.2	48.2	3.6
Library Books	2.4	41.0	50.6	4.8
Magazines & Newspapers	11.0	48.8	26.8	13.8
Electronic				
Commercial TV	32.5	43.4	13.3	10.8
Instructional TV	3.6	30.1	53.0	13.3
EdNet	3.7	11.1	28.4	56.8
CD-ROM	2.4	26.8	31.7	39.0
Laser Disks	3.7	20.7	26.8	48.8
Telecommunications				
Internet	2.5	19.8	19.8	58.0
Telephone	10.4	39.0	26.0	24.7
E-Mail	3.7	23.2	14.6	58.5
World Wide Web	2.5	17.3	12.3	67.9
Electronic Records	2.5	11.1	14.8	71.6
Gopher	2.5	16.3	13.8	67.5
Listerv	6.2	9.9	8.6	75.3

Table C20
Percentage of EMERY Respondent Ratings on Reliability of Print, Electronic & Telecommunications Media

Type of Media	Not Reliable	Somewhat Reliable	Reliable	Don't Know/ No Response
Print				
Textbooks	1.6	49.2	44.3	4.9
Library Books	1.6	52.0	40.7	5.7
Magazines & Newspapers	13.3	56.7	13.3	16.7
Electronic				
Commercial TV	45.9	41.8	5.7	6.6
Instructional TV	1.6	39.8	53.7	4.9
EdNet	3.4	13.6	22.9	60.2
CD-ROM	4.3	23.3	26.7	45.7
Laser Disks	5.2	15.5	17.2	62.1
Telecommunications				
Internet	5.0	22.7	12.6	59.7
Telephone	8.5	34.7	25.4	31.4
E-Mail	6.0	20.7	6.9	66.4
World Wide Web	4.3	8.6	6.9	80.2
Electronic Records	2.6	9.6	9.6	78.3
Gopher	4.3	16.4	6.9	72.4
Listerv	4.3	12.2	3.5	80.0

Table C21
Percentage of GRAND Respondent Ratings on Reliability of Print, Electronic & Telecommunications Media

Type of Media	Not Reliable	Somewhat Reliable	Reliable	Don't Know/ No Response
Print				
Textbooks	7.9	36.8	52.6	2.6
Library Books	0	54.1	43.2	2.7
Magazines & Newspapers	10.5	57.9	28.9	2.6
Electronic				
Commercial TV	42.1	47.4	5.3	5.3
Instructional TV	0	23.7	68.4	7.9
EdNet	0	10.3	43.6	46.2
CD-ROM	0	28.2	43.6	28.2
Laser Disks	0	23.1	43.6	33.3
Telecommunications				
Internet	2.6	25.6	30.8	41.0
Telephone	10.8	43.2	35.1	10.8
E-Mail	5.1	30.8	20.5	43.6
World Wide Web	2.6	13.2	21.1	63.2
Electronic Records	2.6	5.3	15.8	76.3
Gopher	0	15.4	15.4	69.2
Listerv	2.6	7.9	10.5	78.9

Table C22
Percentage of CARBON Respondent Ratings on Reliability of Print, Electronic & Telecommunications Media

Type of Media	Not Reliable	Somewhat Reliable	Reliable	Don't Know/ No Response
Print				
Textbooks	4.8	42.4	48.0	4.8
Library Books	3.2	40.3	51.6	4.8
Magazines & Newspapers	8.9	50.0	31.5	9.7
Electronic				
Commercial TV	29.3	50.4	13.0	7.3
Instructional TV	3.2	25.6	64.8	6.4
EdNet	1.7	9.2	21.0	68.1
CD-ROM	0.8	19.3	36.1	43.7
Laser Disks	1.7	20.5	38.5	39.3
Telecommunications				
Internet	2.5	16.5	23.1	57.9
Telephone	8.4	26.9	27.7	37.0
E-Mail	3.3	21.7	14.2	60.8
World Wide Web	0.9	18.1	7.8	73.2
Electronic Records	1.7	7.8	17.4	73.0
Gopher	1.7	12.9	9.5	75.9
Listerv	1.7	9.5	7.8	81.0

Table C23
Percentage of SAN JUAN Respondent Ratings on Availability of Print, Electronic & Telecommunications Media

Type of Media	Not Available	Somewhat Available	Available	Don't Know/ No Response
Print				
Textbooks	7.1	31.0	61.9	0
Library Books	2.4	31.0	66.7	0
Magazines & Newspapers	11.0	34.1	53.7	1.2
Electronic				
Commercial TV	19.0	27.4	50.0	3.6
Instructional TV	20.2	33.3	44.0	2.4
EdNet	40.2	17.1	28.0	14.6
CD-ROM	15.7	39.8	26.5	18.1
Laser Disks	22.9	27.7	24.1	25.3
Telecommunications				
Internet	43.9	8.5	35.4	12.2
Telephone	7.5	22.5	65.0	5.0
E-Mail	42.7	14.6	26.8	15.9
World Wide Web	42.5	5.0	22.5	30.0
Electronic Records	36.3	6.3	15.0	42.5
Gopher	38.8	7.5	22.5	31.3
Listerv	38.8	7.5	8.8	45.0

Table C24
Percentage of EMERY Respondent Ratings on Availability of Print, Electronic & Telecommunications Media

Type of Media	Not Available	Somewhat Available	Available	Don't Know/ No Response
Print				
Textbooks	0.8	10.6	87.8	0.8
Library Books	1.6	30.9	66.7	0.8
Magazines & Newspapers	5.1	46.6	38.1	10.2
Electronic				
Commercial TV	4.9	18.7	73.2	3.3
Instructional TV	3.3	23.6	69.9	2.4
EdNet	28.6	21.0	24.4	26.1
CD-ROM	21.8	27.7	21.0	29.4
Laser Disks	32.2	16.1	5.1	46.6
Telecommunications				
Internet	33.9	16.1	28.8	21.2
Telephone	7.6	18.6	68.6	5.1
E-Mail	30.5	11.9	23.7	33.9
World Wide Web	31.4	11.0	5.9	51.7
Electronic Records	22.9	11.0	13.6	52.5
Gopher	28.8	8.5	15.3	47.5
Listerv	25.6	8.5	12.8	53.0

Table C25
Percentage of GRAND Respondent Ratings on Availability of Print, Electronic & Telecommunications Media

Type of Media	Not Available	Somewhat Available	Available	Don't Know/ No Response
Print				
Textbooks	0	7.7	89.7	2.6
Library Books	0	17.9	79.5	2.6
Magazines & Newspapers	7.9	47.4	42.1	2.6
Electronic				
Commercial TV	47.4	18.4	28.9	5.3
Instructional TV	31.6	36.8	21.1	10.5
EdNet	33.3	25.6	23.1	17.9
CD-ROM	10.3	46.2	28.2	15.4
Laser Disks	10.3	48.7	15.4	25.6
Telecommunications				
Internet	33.3	30.8	28.2	7.7
Telephone	2.6	20.5	74.4	2.6
E-Mail	18.4	18.4	55.3	7.9
World Wide Web	35.9	15.4	23.1	25.6
Electronic Records	17.9	15.4	15.4	51.3
Gopher	30.8	15.4	10.3	43.6
Listerv	25.6	12.8	5.1	56.4

Table C26
Percentage of CARBON Respondent Ratings on Availability of Print, Electronic & Telecommunications Media

Type of Media	Not Available	Somewhat Available	Available	Don't Know/ No Response
Print				
Textbooks	0.8	21.3	74.8	2.4
Library Books	0	24.4	73.2	2.4
Magazines & Newspapers	6.5	28.2	61.3	4.0
Electronic				
Commercial TV	7.1	23.0	65.9	4.0
Instructional TV	1.6	31.7	65.1	1.6
EdNet	17.6	26.9	17.6	37.8
CD-ROM	6.6	21.3	39.3	32.8
Laser Disks	9.8	28.7	34.4	27.0
Telecommunications				
Internet	16.9	33.1	29.0	21.0
Telephone	2.5	24.6	65.6	7.4
E-Mail	14.0	26.4	28.1	31.4
World Wide Web	13.3	13.3	13.3	60.0
Electronic Records	10.9	7.6	15.1	66.4
Gopher	13.6	13.6	14.4	58.5
Listerv	12.7	8.5	10.2	68.6

Table C27
Percentage of SAN JUAN Respondent Ratings on Frequency of Use of Print, Electronic & Telecommunications Media

Type of Media	Never	Sometimes	Often	Don't Know/ No Response
Print				
Textbooks	9.5	31.0	59.5	0
Library Books	6.0	42.9	51.2	0
Magazines & Newspapers	14.5	62.7	22.9	0
Electronic				
Commercial TV	49.4	43.4	6.0	1.2
Instructional TV	21.4	70.2	8.3	0
EdNet	69.9	9.6	10.8	9.6
CD-ROM	42.2	44.6	6.0	7.2
Laser Disks	59.0	30.1	2.4	8.4
Telecommunications				
Internet	62.2	18.3	12.2	7.3
Telephone	31.3	33.7	32.5	2.4
E-Mail	62.7	12.0	18.1	7.2
World Wide Web	66.3	12.0	9.6	12.0
Electronic Records	63.0	8.6	11.1	17.3
Gopher	65.4	16.0	8.6	9.9
Listerv	69.5	7.3	8.5	14.6

Table C28
Percentage of EMERY Respondent Ratings on Frequency of Use of Print, Electronic & Telecommunications Media

Type of Media	Never	Sometimes	Often	Don't Know/ No Response
Print				
Textbooks	5.0	17.4	77.7	0
Library Books	8.3	33.1	57.9	0.8
Magazines & Newspapers	21.0	63.9	10.1	5.0
Electronic				
Commercial TV	47.1	44.6	5.0	2.5
Instructional TV	15.8	68.3	14.2	1.7
EdNet	73.1	15.1	3.4	8.4
CD-ROM	54.2	32.2	5.9	7.6
Laser Disks	74.1	13.8	0.9	11.2
Telecommunications				
Internet	71.2	16.9	3.4	8.5
Telephone	25.9	39.7	26.7	7.8
E-Mail	72.2	13.9	3.5	10.4
World Wide Web	75.2	7.7	0.9	16.2
Electronic Records	59.8	13.7	12.0	14.5
Gopher	65.4	16.0	8.6	9.9
Listerv	68.4	14.5	1.7	15.4

Table C29
Percentage of GRAND Respondent Ratings on Frequency of Use of Print, Electronic & Telecommunications Media

Type of Media	Never	Sometimes	Often	Don't Know/ No Response
Print				
Textbooks	2.9	28.6	68.6	0
Library Books	11.4	37.1	51.4	0
Magazines & Newspapers	20.0	60.0	20.0	0
Electronic				
Commercial TV	57.1	31.4	8.6	2.9
Instructional TV	34.3	40.0	22.9	2.9
EdNet	81.8	9.1	3.0	6.1
CD-ROM	40.0	42.9	8.6	8.6
Laser Disks	57.1	25.7	8.6	8.6
Telecommunications				
Internet	71.4	22.9	2.9	2.9
Telephone	17.1	28.6	51.4	2.9
E-Mail	52.9	38.2	5.9	2.9
World Wide Web	66.7	12.1	3.0	18.2
Electronic Records	65.7	11.4	5.7	17.1
Gopher	68.6	8.6	2.9	20.0
Listerv	68.6	2.9	5.7	22.9

Table C30
Percentage of CARBON Respondent Ratings on Frequency of Use of Print, Electronic & Telecommunications Media

Type of Media	Never	Sometimes	Often	Don't Know/ No Response
Print				
Textbooks	2.4	24.0	72.0	1.6
Library Books	5.6	32.5	59.5	2.4
Magazines & Newspapers	10.5	61.3	24.2	4.0
Electronic				
Commercial TV	45.6	47.2	5.6	1.6
Instructional TV	9.5	69.8	19.0	1.6
EdNet	67.5	15.0	2.5	15.0
CD-ROM	45.5	31.4	10.7	12.4
Laser Disks	48.4	32.3	6.5	12.9
Telecommunications				
Internet	64.2	22.5	2.5	10.8
Telephone	25.6	34.4	32.8	7.2
E-Mail	68.1	18.5	2.5	10.9
World Wide Web	66.4	14.3	1.7	17.6
Electronic Records	61.7	10.8	7.5	20.0
Gopher	64.7	16.0	2.5	16.8
Listerv	65.8	38.5	0	21.4

Table C31

Percentage of Respondents Using Commercial or Educational Information Providers by County

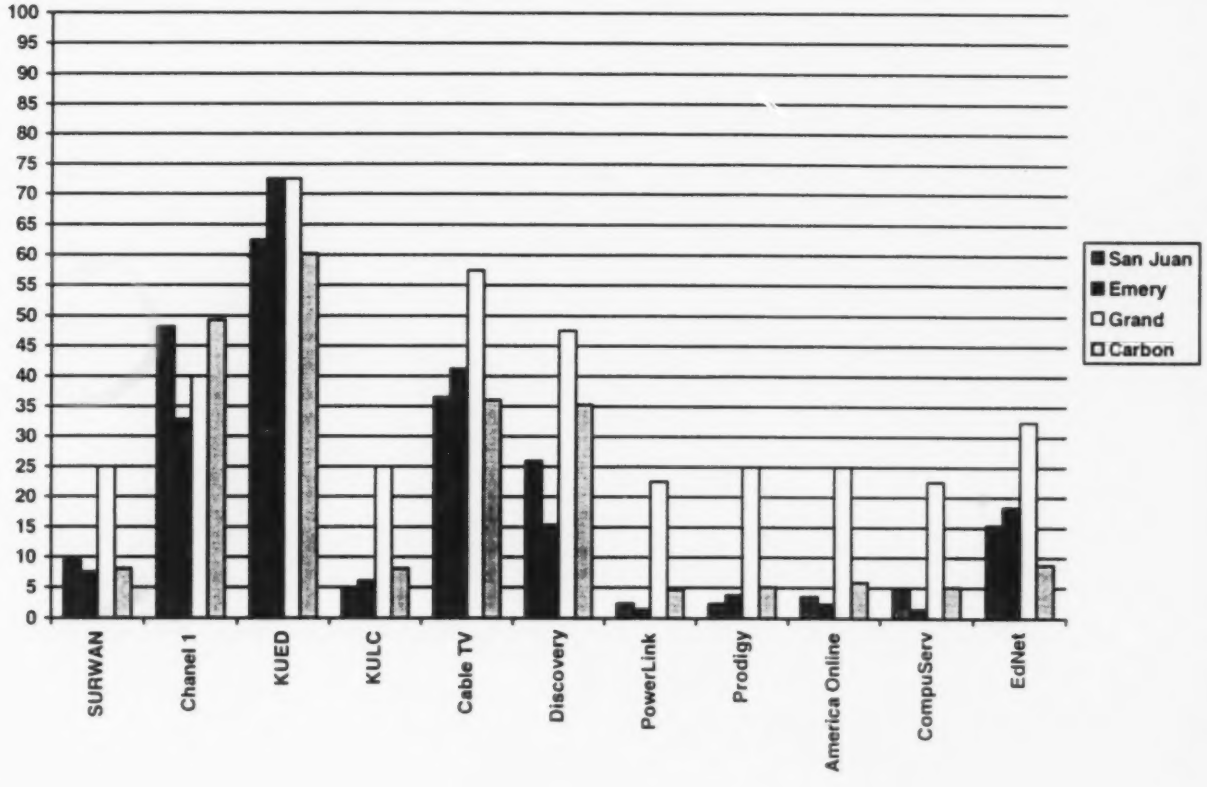


Table C32
Mean Ratings on SURWAN Contribution to the Community by County
(Scale: 1 = strongly disagree; 2 = somewhat disagree; 3 = neither agree or disagree;
4 = somewhat agree; 5 = strongly agree)

	San Juan	Emery	Grand	Carbon
Stimulate Investment	3.25	3.14	3.30	3.14
Enhance Business	2.69	3.18	3.35	3.20
Make Schools Competitive	3.58	3.36	3.57	3.31
Higher Real Estate Value	2.94	2.84	2.91	3.73

Table C33
Respondent Mean Ratings on Attitude About Technology by County
(Scale: 1 = strongly disagree; 2 = disagree; 3 = neither agree or disagree;
4 = agree; 5 = strongly agree)

	San Juan	Emery	Grand	Carbon
Information technology is the wave of the future	4.03	4.11	4.21	4.53
Internet is important to regional economy	2.95	2.99	3.34	3.13
Student won't get jobs if they don't know how to use the Internet	3.04	2.93	2.95	2.95
Business has right to sell online	2.74	3.10	3.13	3.75
Cost for investment of technology is too high	3.24	3.03	2.75	3.16
Internet will create wide gaps between "haves & "have nots"	3.45	3.29	3.37	3.48
Technology will help solve social inequities	2.77	2.70	2.78	2.66
Computer hackers can gain access to the system and do damage	3.58	3.59	4.00	3.68
My privacy can be invaded by putting information into the system	3.44	3.41	3.45	3.43
The use of technology is a waste of time	1.84	1.75	1.78	1.82
Some students will misuse the system to get inappropriate information	3.56	3.56	3.66	3.98
Internet will destroy traditional reading and writing	2.66	2.42	2.26	2.48
Internet brings the wrong values into my community	2.65	2.62	2.50	2.67
Students will use Internet to play instead of learn	3.23	3.38	3.42	3.37
It is more valuable to communicate face-to-face	3.10	3.07	3.37	3.33

Appendix D

Results by Grade Level

Table D1
Percentage of Teachers with Access to Technology on the Job

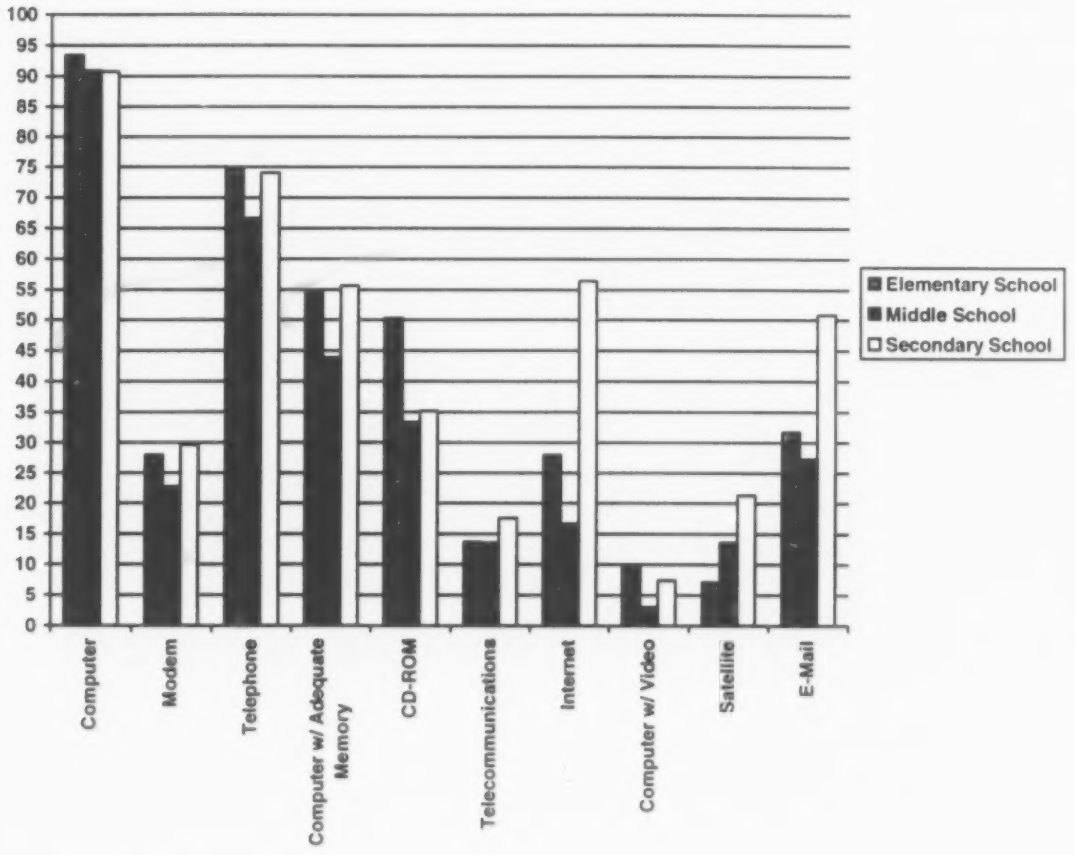


Table D2
Percentage of Teachers with Access to Technology at Home

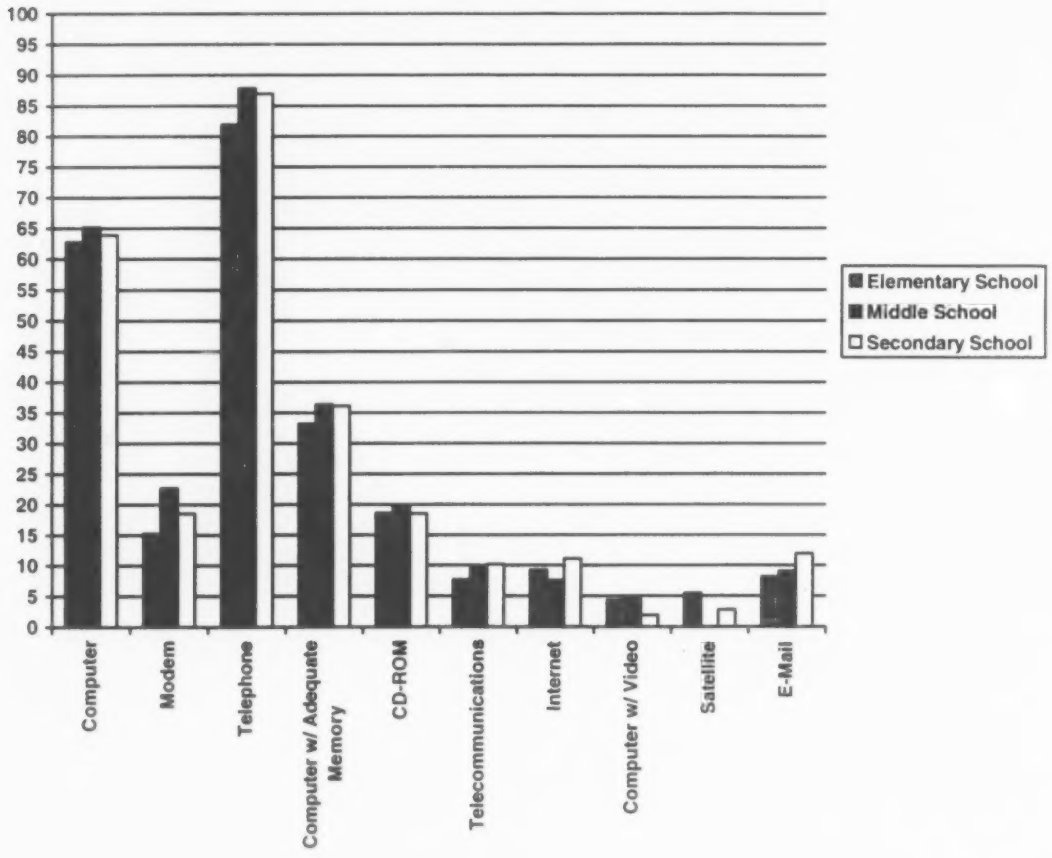


Table D3
Percentage of Teachers Reporting "About Right" Amount of Information for Print, Electronic & Telecommunications Media

Type of Media	Elementary (N - 183)	Middle School (N = 166)	High School (N = 108)
Print			
Textbooks	62.0	71.8	72.8
Library Books	72.1	60.6	60.0
Mag. & Newspaper	57.8	54.3	62.7
Electronic			
Commercial TV	25.0	16.6	17.3
Instructional TV	71.8	66.6	60.8
EdNet	21.5	27.1	65.0
CD-ROM	70.7	60.0	69.6
Laserdisks	67.1	57.5	68.2
Telecommunications			
Internet	50.7	31.0	44.4
Telephone	71.0	48.8	54.2
E-Mail	53.5	46.1	53.8
WWW	47.6	42.8	46.8
Electronic Records	44.4	52.9	67.5
Gopher	50.0	47.3	50.0
Listserv	45.4	53.3	56.7

Table D4
Percentage of Elementary Teachers Rating Ease of Use of Print, Electronic & Telecommunications Media (N = 183)

Type of Media	Not Easy	Somewhat Easy	Easy	Don't Know/ No Response
Print				
Textbooks	1.8	27.6	67.5	3.1
Library Books	1.8	20.7	75.0	2.4
Magazines & Newspapers	7.0	23.4	62.7	7.0
Electronic				
Commercial TV	10.0	14.4	67.5	8.1
Instructional TV	6.2	28.0	61.5	4.3
EdNet	13.8	20.4	9.9	55.3
CD-ROM	5.8	35.1	24.0	35.1
Laser Disks	9.8	26.8	17.6	45.8
Telecommunications				
Internet	19.0	22.9	9.2	48.4
Telephone	5.8	5.8	68.6	19.9
E-Mail	12.6	17.2	16.6	53.6
World Wide Web	12.2	13.6	4.8	69.4
Electronic Records	12.6	12.6	3.3	71.5
Gopher	12.6	15.2	6.6	65.6
Listerv	10.6	12.6	2.0	74.8

Table D5
Percentage of Elementary Teachers Rating Reliability of Print, Electronic & Telecommunications Media (N = 183)

Type of Media	Not Reliable	Somewhat Reliable	Reliable	Don't Know/ No Response
Print				
Textbooks	3.7	52.8	38.7	4.9
Library Books	0.6	51.8	41.5	6.1
Magazines & Newspapers	9.9	54.7	20.5	14.9
Electronic				
Commercial TV	35.2	45.1	11.1	8.6
Instructional TV	1.2	28.5	61.8	8.5
EdNet	1.3	11.8	20.3	66.7
CD-ROM	1.3	21.9	31.6	45.2
Laser Disks	2.6	16.9	28.6	51.9
Telecommunications				
Internet	2.6	16.0	18.6	62.8
Telephone	8.5	30.1	28.8	32.0
E-Mail	2.6	19.9	12.2	65.4
World Wide Web	0.7	11.1	7.8	80.4
Electronic Records	0.7	7.2	9.9	82.2
Gopher	2.6	12.3	9.7	75.3
Listerv	2.0	6.6	4.6	86.2

Table D6
Percentage of Elementary Teachers Rating Availability of Print, Electronic & Telecommunications Media (N = 183)

Type of Media	Not Available	Somewhat Available	Available	Don't Know/ No Response
Print				
Textbooks	4.2	15.7	77.7	1.8
Library Books	1.2	23.5	72.9	2.4
Magazines & Newspapers	10.7	39.6	39.6	10.1
Electronic				
Commercial TV	13.4	14.0	69.5	3.0
Instructional TV	9.6	21.7	65.7	2.4
EdNet	29.5	22.4	14.1	34.0
CD-ROM	11.4	31.0	29.1	28.5
Laser Disks	18.6	26.3	19.9	35.3
Telecommunications				
Internet	29.8	23.0	22.4	24.8
Telephone	5.7	20.8	64.2	9.4
E-Mail	26.1	17.2	24.2	32.5
World Wide Web	28.6	9.1	8.4	53.9
Electronic Records	19.4	9.7	12.3	58.7
Gopher	26.8	9.8	7.8	55.6
Listerv	22.7	7.1	5.2	64.9

Table D7
Percentage of Elementary Teachers Rating How Often They Use Print, Electronic & Telecommunications Media (N = 183)

Type of Media	Never	Sometimes	Often	Don't Know/ No Response
Print				
Textbooks	3.7	24.8	70.8	0.6
Library Books	2.5	14.9	80.7	1.9
Magazines & Newspapers	18.4	62.0	14.6	5.1
Electronic				
Commercial TV	53.1	41.9	3.1	1.9
Instructional TV	13.7	68.3	17.4	0.6
EdNet	68.2	15.6	2.6	13.6
CD-ROM	46.2	39.1	5.8	9.0
Laser Disks	58.1	27.7	3.9	10.3
Telecommunications				
Internet	69.2	17.9	1.9	10.9
Telephone	28.5	39.9	23.4	8.2
E-Mail	71.7	17.1	1.3	9.9
World Wide Web	73.0	9.9	0.7	16.4
Electronic Records	63.7	13.4	6.4	16.6
Gopher	69.5	14.3	0.6	15.6
Listerv	69.7	11.6	0.6	18.1

Table D8
Percentage of Middle School Teachers Rating Ease of Use of Print, Electronic & Telecommunications Media (N = 166)

Type of Media	Not Easy	Somewhat Easy	Easy	Don't Know/ No Response
Print				
Textbooks	4.8	28.6	65.1	1.6
Library Books	1.6	33.3	63.5	1.6
Magazines & Newspapers	0	27.0	68.3	4.8
Electronic				
Commercial TV	1.6	18.0	77.0	3.3
Instructional TV	1.6	27.0	68.3	3.2
EdNet	21.0	16.1	4.8	58.1
CD-ROM	10.0	23.3	31.7	35.0
Laser Disks	13.3	28.3	20.0	38.3
Telecommunications				
Internet	23.0	23.0	4.9	49.2
Telephone	1.6	12.7	76.2	9.5
E-Mail	13.3	18.3	6.7	61.7
World Wide Web	13.3	11.7	1.7	73.3
Electronic Records	14.8	8.2	3.3	73.8
Gopher	15.3	8.5	0	76.3
Listerv	15.3	8.5	0	76.3

Table D9
Percentage of Middle School Teachers Rating Reliability of Print, Electronic & Telecommunications Media (N = 166)

Type of Media	Not Reliable	Somewhat Reliable	Reliable	Don't Know/ No Response
Print				
Textbooks	0	42.9	52.4	4.8
Library Books	0	43.5	51.6	4.8
Magazines & Newspapers	12.9	51.6	25.8	9.7
Electronic				
Commercial TV	41.0	41.0	9.8	8.2
Instructional TV	0	38.7	53.2	8.1
EdNet	1.6	14.5	14.5	69.4
CD-ROM	3.3	23.0	31.1	42.6
Laser Disks	3.3	26.2	26.2	44.3
Telecommunications				
Internet	3.2	17.7	11.3	67.7
Telephone	8.5	37.3	22.0	32.2
E-Mail	3.3	18.0	8.2	70.5
World Wide Web	1.7	15.0	6.7	76.7
Electronic Records	1.6	6.6	9.8	82.0
Gopher	1.7	10.0	5.0	83.3
Listerv	1.7	8.3	3.3	86.7

Table D10
Percentage of Middle School Teachers Rating Availability of Print, Electronic & Telecommunications Media on the Job (N = 166)

Type of Media	Not Easy	Somewhat Easy	Easy	Don't Know/ No Response
Print				
Textbooks	0	26.2	72.3	1.5
Library Books	0	36.9	61.5	1.5
Magazines & Newspapers	4.7	39.1	53.1	3.1
Electronic				
Commercial TV	10.8	35.1	44.6	9.2
Instructional TV	6.3	37.5	51.6	4.7
EdNet	42.2	18.8	9.4	29.7
CD-ROM	25.0	31.3	18.8	25.0
Laser Disks	28.1	31.3	14.1	26.6
Telecommunications				
Internet	54.0	23.8	9.5	12.7
Telephone	11.5	19.7	62.3	6.6
E-Mail	48.4	14.1	15.6	21.9
World Wide Web	47.6	4.8	1.6	46.0
Electronic Records	37.5	9.4	4.7	48.4
Gopher	46.0	6.3	4.8	42.9
Listerv	46.0	3.2	0	50.8

Table D11
Percentage of Middle School Teachers Rating How Often They Use Print, Electronic & Telecommunications Media on the Job (N = 166)

Type of Media	Never	Sometimes	Often	Don't Know/ No Response
Print				
Textbooks	3.1	14.1	82.8	0
Library Books	7.8	37.5	54.7	0
Magazines & Newspapers	10.9	60.9	26.6	1.6
Electronic				
Commercial TV	46.9	42.2	6.3	3.1
Instructional TV	19.0	63.5	14.3	3.2
EdNet	82.5	1.6	3.2	12.7
CD-ROM	41.3	38.1	4.8	15.9
Laser Disks	66.7	11.1	4.8	17.5
Telecommunications				
Internet	79.0	9.7	1.6	9.7
Telephone	36.5	23.8	33.3	6.3
E-Mail	77.8	7.9	1.6	12.7
World Wide Web	74.6	4.8	0	20.6
Electronic Records	68.3	9.5	3.2	19.0
Gopher	67.7	9.7	0	22.6
Listerv	73.8	1.6	0	24.6

Table D12
Percentage of High School Teachers Rating Ease of Use of Print, Electronic & Telecommunications Media (N = 108)

Type of Media	Not Easy	Somewhat Easy	Easy	Don't Know/ No Response
Print				
Textbooks	4.7	19.6	73.8	1.9
Library Books	5.6	24.3	68.2	1.9
Magazines & Newspapers	0.9	17.9	74.5	6.6
Electronic				
Commercial TV	13.5	10.6	68.3	7.7
Instructional TV	7.5	29.2	58.5	4.7
EdNet	21.2	25.0	15.4	38.5
CD-ROM	8.6	27.6	31.4	32.4
Laser Disks	9.5	22.9	28.6	39.0
Telecommunications				
Internet	23.3	31.1	18.4	27.2
Telephone	5.8	7.8	78.6	7.8
E-Mail	11.7	22.3	32.0	34.0
World Wide Web	17.3	20.2	11.5	51.0
Electronic Records	8.7	15.4	13.5	62.5
Gopher	11.7	25.2	14.6	48.5
Listerv	13.5	13.5	10.6	62.5

Table D13
Percentage of High School Teachers Rating Reliability of Print, Electronic & Telecommunications Media (N = 108)

Type of Media	Not Reliable	Somewhat Reliable	Reliable	Don't Know/ No Response
Print				
Textbooks	6.6	37.7	53.8	1.9
Library Books	5.7	37.1	52.4	3.8
Magazines & Newspapers	12.3	49.1	29.2	9.4
Electronic				
Commercial TV	39.0	43.8	9.5	7.6
Instructional TV	4.8	35.2	51.4	8.6
EdNet	3.8	12.3	34.0	50.0
CD-ROM	4.8	30.8	24.0	40.4
Laser Disks	4.9	26.2	25.2	43.7
Telecommunications				
Internet	5.7	29.2	23.6	41.5
Telephone	12.6	32.0	28.2	27.2
E-Mail	7.7	29.8	13.5	49.0
World Wide Web	5.0	19.8	12.9	62.4
Electronic Records	4.0	12.9	16.8	66.3
Gopher	2.0	25.5	12.7	59.8
Listerv	4.9	18.4	9.7	67.0

Table D14
Percentage of High School Teachers Rating Availability of Print, Electronic & Telecommunications Media on the Job (N = 108)

Type of Media	Not Available	Somewhat Available	Available	Don't Know/ No Response
Print				
Textbooks	1.9	19.8	77.4	0.9
Library Books	1.9	34.0	63.2	0.9
Magazines & Newspapers	3.8	34.0	60.4	1.9
Electronic				
Commercial TV	11.3	30.2	53.8	4.7
Instructional TV	6.6	44.3	44.3	4.7
EdNet	10.6	31.7	39.4	18.3
CD-ROM	13.3	25.7	31.4	29.5
Laser Disks	16.0	26.4	21.7	35.8
Telecommunications				
Internet	12.4	26.7	51.4	9.5
Telephone	3.8	24.0	69.2	2.9
E-Mail	7.7	26.9	42.3	23.1
World Wide Web	11.4	21.0	22.9	44.8
Electronic Records	8.7	10.7	21.4	59.2
Gopher	7.7	19.2	32.7	40.4
Listerv	7.8	16.7	21.6	53.9

Table D15
Percentage of High School Teachers Rating How Often They Use Print, Electronic & Telecommunications Media on the Job (N = 108)

Type of Media	Never	Sometimes	Often	Don't Know/ No Response
Print				
Textbooks	5.7	15.1	78.3	0.9
Library Books	13.2	53.8	32.1	0.9
Magazines & Newspapers	15.2	58.1	24.8	1.9
Electronic				
Commercial TV	44.3	46.2	6.6	2.8
Instructional TV	16.0	67.0	14.2	2.8
EdNet	75.2	14.3	6.7	3.8
CD-ROM	60.6	25.0	5.8	8.7
Laser Disks	67.6	20.0	2.9	9.5
Telecommunications				
Internet	55.2	32.4	9.5	2.9
Telephone	22.9	41.0	32.4	3.8
E-Mail	55.3	23.3	15.5	5.8
World Wide Web	63.5	18.3	5.8	12.5
Electronic Records	57.8	9.8	13.7	18.6
Gopher	57.3	24.3	7.8	10.7
Listerv	62.7	14.7	6.9	15.7

Table D16
Percentage of Teachers Reporting Use of Information Providers

Information Provider	Elementary (N = 183)	Middle School (N = 166)	High School (N = 108)
SURWAN	11.0	1.5	13.0
Channel One	10.5	86.4	78.7
KUED	76.2	59.1	62.0
KULC	8.8	1.5	9.3
Cable TV	35.9	33.3	44.4
Discovery Network	26.5	28.8	31.5
PowerLink	6.1	1.5	3.7
Prodigy	8.3	1.5	4.6
America On-Line	7.2	3.0	4.6
Compuserve	6.1	3.0	5.6
EdNet	15.5	3.0	19.4

Table D17
Percentage of Teachers who Use SURWAN for Specific Purposes

Purpose	Elementary (N = 183)	Middle School (N = 166)	High School (N = 108)
Entertainment	3.9	1.5	9.3
To Keep up w/ News	5.0	1.5	8.3
Professional Development	7.7	4.5	12.0
Personal Communication	4.4	3.0	12.0
Research Topics	8.3	4.5	13.9
Gather Classroom Resources	7.2	6.1	13.9

Table D18
Percentage of Teachers who Report that They Spend No Time Online

Elementary (N = 183)	Middle School (N = 166)	High School (N = 108)
85.7	91.3	52.5

Table D19
Mean Rating of Teacher Attitudes About SURWAN's Contribution to the Community
(1 = Strongly Disagree; 2 = disagree; 3 = neither agree or disagree;
4 = agree; and 5 = strongly agree)

	Mean Rating		
	Elementary	Middle School	High School
Stimulate investment by telephone & cable companes		2.46	3.13
Enhance Business Development	3.25	3.58	3.15
Make schools competitive	3.36	3.30	3.36
Result in higher real estate values	3.01	2.83	2.76

Table D20
Respondent Mean Ratings of Teachers on Attitude About Value of Technology
(1 = Strongly Disagree; 2 = disagree; 3 = neither agree or disagree; 4 = agree;
and 5 = strongly agree)

	Elementary	Middle School	High School
Information technology is the wave of the future	4.16	4.15	4.05
Internet is important to regional economy	3.17	3.00	2.98
Student won't get jobs if they don't know how to use the Internet	3.08	3.09	2.74
Business has right to sell online	3.01	3.17	3.05
Cost for investment of technology is too high	2.85	2.76	3.08
Internet will create wide gaps between "haves" & "have nots"	3.39	3.38	3.49
Technology will help solve social inequities	2.80	2.47	2.61
Computer hackers can gain access to the system and do damage	3.58	3.80	3.79
My privacy can be invaded by putting information into the system	3.07	3.53	3.52
The use of technology is a waste of time	1.81	1.11	1.86
Some students will misuse the system to get inappropriate information	3.55	3.90	3.85
Internet will destroy traditional reading and	2.44	2.73	2.48

writing			
Internet brings the wrong values into my community	2.65	2.63	2.68
Students will use Internet to play instead of learn	3.18	3.61	3.62
It is more valuable to communicate face-to-face	3.18	3.41	3.35